



TOWN OF PALM BEACH

Town Manager's Office

TENTATIVE -
SUBJECT TO
REVISION

ORDINANCES, RULES AND STANDARDS COMMITTEE MEETING

AGENDA

Thursday, July 1, 2021
9:30 AM

Meeting Held in Council Chambers
Also Accessible to Public via Zoom

<https://zoom.us/j/97937357842>

I. CALL TO ORDER AND ROLL CALL

Julie Araskog, Committee Chair
Ted Cooney, Committee Member

II. PLEDGE OF ALLEGIANCE

III. APPROVAL OF AGENDA

IV. COMMUNICATIONS FROM CITIZENS

V. REGULAR AGENDA

A. Old Business

1. Review of Chapter 42 of the Town Code, Relative to Construction Hours
Jay Boodheshwar, Deputy Town Manager
2. Review Draft Language to Regulate the Use of Synthetic Turf
Wayne Bergman, Director of Planning, Zoning and Building

B. New Business

1. Review of Truck Study Report
Paul Brazil, Director of Public Works

2. Discuss Possible Modifications to the Native Landscape Section in Chapter 66 of the Town Code
Wayne Bergman, Director of Planning, Zoning and Building
3. Discuss Potential Height Limitations of Vegetation Adjacent to Neighboring Structures
Wayne Bergman, Director of Planning, Zoning and Building

VI. ANY OTHER MATTERS

VII. ADJOURNMENT

PLEASE TAKE NOTE:

The progress of this meeting may be monitored by visiting the Town's website (www.townofpalmbeach.com) and clicking on "Meeting Audio" in the left column. If you have questions regarding that feature, please contact the Office of Information Technology (561) 227-6315. The audio recording of the meeting will appear within 24 hours after the conclusion of the meeting.

Disabled persons who need an accommodation in order to participate in the meeting are requested to contact the Town Manager's Office at 838-5410 or through the Florida Relay Service by dialing 1-800-955-8770 for voice callers or 1-800-955-8771 for TDD callers, at least two (2) working days before this meeting.

TOWN OF PALM BEACH

Information for ORS Committee Meeting on: July 1, 2021

To: Ordinances, Rules & Standards Committee

From: Jay Boodheshwar, Deputy Town Manager

Re: Review of Chapter 42 of the Town Code, Relative to Construction Hours

Date: June 25, 2021

STAFF RECOMMENDATION

Staff recommends the ORS Committee review the information provided, relative to potential modifications to the Town Code to prohibit Saturday construction hours and provide direction.

GENERAL INFORMATION

As outlined in Chapter 42 of the Town Code, construction work is permitted Monday through Friday from 8:00 am to 5:00 pm (quiet work only from 8:00 am – 9:00 am) during the peak season (beginning on the Monday preceding Thanksgiving until April 30) and from 8:00 am to 6:00 pm during the summer season (May 1 until the Saturday preceding Thanksgiving). The Code also permits “quiet” construction work on Saturdays from 9:00 am to 5:00 pm on a year-round basis.

At the May 20, 2021, ORS meeting, members discussed the merits of several options that would reduce or eliminate Saturday construction hours on a year-round basis, including:

Option 1: Different rules for bigger lots for RA and RAA lots, because the homes were farther apart than in RB and would diminish noise. The Committee did not recommend this option because Ms. Araskog thought lots in those areas can be close together and Mr. Cooney thought this could be problematic for both code enforcement and builders to understand.

Option 2: Allow a specific amount of interior work hours on Saturdays according to the area, maybe north of a certain street and then afternoon hours south of another street or alternating weekends in different areas. This was not recommended by staff. The Committee agreed and did not recommend this option as it would be confusing and hard to enforce

Option 3: A complete ban on Saturdays and starting daily construction hours one hour earlier to offset the time lost as recommended by John David Corey. The Committee liked this option but did not recommend adding an hour in the morning due to staff concerns.

Option 4: No work on Saturdays to occur in the high season- January through March- when the Town is at peak population and bustling and add back the hours during the workweek outside of those three months.

Option 5: Planning, Zoning and Building Director Wayne Bergman discussed the option of mitigating the loss of 3 hours of Saturday Construction throughout the year by adding them to the duration of the building permit. Mr. Boodheshwar calculated a loss of 156 hours [or 19.5 days], if an additional hour was added Monday through Friday in and out of season. Director Bergman recommended modifying the permit duration period to add the 156 hours back into the permitted time.

After much discussion, the Committee favored the Option 5 concept, which would eliminate Saturday construction work on a year-round basis (approximately 416 hours of lost quiet work time) but offset the loss of hours by adding to the allowable hours Monday through Friday. Staff requests that the Committee consider the following as it finalizes the recommendation for Council consideration.

1. Add 1 hour of quiet work to the end of the currently permitted construction hours, Monday through Friday during the peak season (Monday preceding Thanksgiving through April 30. This period of time from November 23, 2020, through April 30, 2021, was inclusive of 23 weeks or 115 weekdays. Three (3) holidays were included during this time when construction is not permitted. Therefore, the addition of 1 hour each day would offset the lost 416 hours by 112 hours, leaving a net loss of 304 quiet hours. The net loss of hours could be further offset by increasing the duration of the building permit by 304 hours (or 38 days).
2. Add 1 hour of quiet work to the end of the currently permitted construction hours, Monday through Friday year-round. This period of time is inclusive of 52 weeks or 260 weekdays. Eight (8) holidays were included during this time when construction is not permitted. Therefore, the addition of 1 hour each day would offset the lost 416 hours by 252 hours, leaving a net loss of 164 quiet hours. The net loss of hours could be further offset by increasing the duration of the building permit by 164 hours (or 20.5 days).
3. Leave the currently permitted construction hours as is and offset the lost quiet hours by increasing the duration of the building permit by 416 hours (or 52 days).

Attachments

cc: Wayne Bergman, Director of Planning, Zoning and Building
Nick Caristo, Police Chief
Ben Alma, Support Services Manager
John Randolph, Town Attorney



Town of Palm Beach

2021 Holidays

(Town Offices Closed)

2021

Friday, January 1, 2021	New Year's Day
Monday, January 18, 2021	Martin Luther King, Jr. Day
Monday, February 15, 2021	Presidents' Day
Monday, May 31, 2021	Memorial Day
Monday, July 5, 2021	Independence Day* (observed)
Monday, September 6, 2021	Labor Day
Thursday, November 11, 2021	Veterans' Day
Thursday, November 25, 2021	Thanksgiving Day
Friday, November 26, 2021	Day After Thanksgiving [±]
Thursday, December 23, 2021	Christmas Eve* (observed)
Friday, December 24, 2021	Christmas Day* (observed)
Thursday, December 30, 2020	New Year's Eve* (observed)
Friday, December 31, 2021	New Year's Day* (observed)

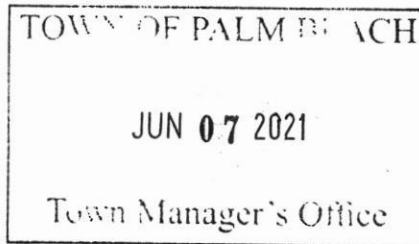
* Town offices closed but construction work and landscaping permitted

[±] Town offices closed but landscaping permitted

June 2, 2021



Mayor & Town Council
Town of Palm Beach
360 South County Road
Palm Beach, FL 33480



RE: Saturday Work

For a town that was built by free enterprise industrialists and applauds the accomplishments of those Fortune 500 leaders as residents, the current issue of stopping labor on interior works on Saturdays is difficult to understand.

The chamber has 63 member companies that would be adversely impacted by this move. Free enterprise encourages labor, supports the efforts of those who are willing to work and who take pride in their contributions. The economy may be booming for some, but for those hourly workers, having additional work denied them can be devastating.

Interior work, whether painting, delivering goods, installing drapes or washing windows cannot disturb the comfort and convenience of residents in a resort community, many of whom travel in the summer months.

The chamber would encourage careful reconsideration of this move inasmuch as it runs counter to the free enterprise system of America.

Sincerely,

palm beach chamber of commerce, inc.

400 royal palm way, suite 106, palm beach, fl 33480 www.palmbeachchamber.com

561.655.3282

executive board

roy assad, chair
human capital group

david renna, vice-chair
the breakers palm beach

caroline harless, treasurer
the harless group

laurel baker, ceo & secretary
palm beach chamber of commerce

board of directors

christian angle
christian angle real estate

ashley berry
vita nova

greg etimos
brewster allen wichert insurance

rob frisbie
the frisbie group

chadi irani
the palm beach post & shiny sheet

debra vasilopoulos
first horizon bank

kirk blouin, ex officio
town of palm beach

harvey e. oyer, III
historian

monique classen
director of membership

sandy coto
member engagement

TOWN OF PALM BEACH

Information for ORS Meeting on: July 1, 2021

To: ORS Members

Via: Jay Boodheshwar, Deputy Town Manager

From: Wayne Bergman, Director of Planning, Zoning & Building



Re: Artificial Turf

Date: June 16, 2021

GENERAL INFORMATION

As you know, artificial turf is not directly regulated by the Town codes at this time, but site plans and landscaping plans must be approved through a Commission review process. Landscape plans for redevelopment are studied by either the Landmarks Preservation Commission (if a historically significant building or a landmarked property) or by the Architectural Review Commission (ARCOM) for all other properties. The current Arcom Project Designation Manual and Guide lists artificial turf as a Minor Project Without Notice for Arcom and a C.O.A. for the Landmarks Preservation Commission.

ORS discussed this matter at their last meeting and began the review of a few ordinances and codes that regulate artificial turf. Staff has drafted an ordinance regarding artificial turf, per direction from ORS, focusing on a simple definition, allowed locations, approval, standards, installation procedure, and dealing with existing artificial turf installations.

A few items in the ordinance have some suggested numerical options and items, such as the maximum amount of turf permitted, permeability, manufacturer's warranty, and when to replace existing artificial turf. Discussion on these items are necessary.

Attached: Draft Ordinance
Ord. No. 2019-15 from the Town of Ocean Ridge
Ord. No. 2013-10 from the Village of Key Biscayne
Existing Code from Jupiter Inlet Colony, Chapter 4, Building Regulations & Appendix A, Zoning

ORDINANCE NO. ____-2021

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AMENDING CHAPTER 66 NATURAL RESOURCE PROTECTION, ARTICLE IV VEGETATION, DIVISION 5 - REGULATIONS, BY ADDING SECTIONS 66-313 THROUGH 66-317 – ARTIFICIAL TURF; PROVIDING FOR SEVERABILITY; PROVIDING FOR THE REPEAL OF ORDINANCES IN CONFLICT; PROVIDING FOR CODIFICATION; AND PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AS FOLLOWS:

Section 1. Chapter 66, Natural Resource Protection, Article IV, Vegetation, Division 5, Regulations, is hereby amended by adding Sections 66-313 through 66-317, Artificial Turf, to read as follows:

“Sec. 66-313. – Artificial Turf - Definition.

Artificial Turf - An artificial product manufactured from synthetic materials that simulates the appearance of natural turf, grass, sod or lawn.

Sec. 66-314. – Artificial Turf - Locations.

In all zoning districts, artificial turf/synthetic grass shall be reviewed and may be approved in accordance with the Arcom Project Designation Manual, or Project Designation Guide for Landmarked and Historically Significant Building properties, and may be installed in only rear and side yards. Approved artificial turf shall not exceed [5 ?] % of the total lot area. Artificial turf/synthetic grass shall not be installed in any front yard areas or in any area visible from the public right-of-way (regardless of whether it is in the rear or side yard). No artificial turf shall be installed in the public right-of-way.

Sec. 66-315. – Artificial Turf - Standards.

All artificial turf shall comply with the following minimum standards:

- (a) Artificial turf shall consist of green lifelike individual blades of grass that emulate natural turf in look and color, and shall have a minimum pile height of one and one-half (1.5) inches, unless otherwise approved by the reviewing Commission, being either the Architectural Review Commission or the Landmarks Preservation Commission, and shall have a minimum tufted weight of fifty-six (56) ounces per square yard.
- (b) Artificial turf installations shall have a minimum permeability of [15" to 30"] inches per hour per square yard.
- (c) All artificial turf shall have a minimum [8 to 15] -year manufacturer's that protects against color fading and a decrease in pile height.

- (d) Artificial turf shall be lead free.
- (e) All materials must include test documentation which declares that the artificial turf yarn and backing materials are disposable under normal conditions, at any U.S. landfill station (Total Content Leach Protocol (TCLP) test). Documentation must also be provided that identifies that all components are 100 percent recyclable.
- (f) The use of indoor or outdoor plastic or nylon carpeting as a replacement for artificial turf or natural turf shall be prohibited.

NEW BUSINESS #2

Sec. 66-316. – Artificial Turf - Installation, Maintenance and Repair.

- (a) Proposed artificial turf shall be installed only pursuant to the procedures and standards set forth in this Chapter. In addition, a property owner or applicant shall obtain a duly-authorized building permit prior to the installation of any artificial turf.
- (b) All artificial turf shall, at a minimum, be installed according to the manufacturer's specifications.
- (c) All artificial turf installations shall be anchored to ensure the turf will withstand the effects of high wind(s).
- (d) All seams shall be secured and edges shall be trimmed to fit against all regular and irregular edges to resemble a natural look.
- (e) If artificial turf is planned to be installed immediately adjacent to a seawall, the artificial turf shall be pinned or staked behind the seawall. No artificial turf or installation mechanism shall be attached directly to or placed on a seawall or seawall cap.
- (f) Proper drainage shall be provided for all artificial turf installations to prevent excess runoff or pooling of water.
- (g) Artificial turf shall be visually level, with the grain pointing in a single direction.
- (h) An appropriate solid barrier device (e.g. concrete mow strip, bender board) is required to separate artificial turf from soil and live vegetation.
- (i) Precautions for installation around existing trees shall be monitored and may be restricted to ensure tree roots are not damaged with the installation of the base material and that the overall health of the tree will not be compromised.
- (j) All artificial turf shall be maintained in a green fadeless condition and shall be maintained free of dirt, mud, stains, weeds, debris, tears, holes, and impressions. Maintenance shall include, but not be limited to, cleaning, brushing, debris removal; repairing of depressions and ruts to maintain a visually-level surface; elimination of any odors, flat or matted areas, weeds, and invasive roots; and all edges of the artificial turf shall not be loose and must be maintained with appropriate edging or stakes.
- (k) All artificial turf must be replaced by the property owner if it falls into disrepair with fading, holes, or loose areas. Replacement and/or repairs shall be done with like for like materials and in a manner that results in a repair that blends-in with the existing artificial turf.
- (l) In all areas of installation, artificial turf shall be considered as 100% pervious surface area. A minimum two and one-half-foot landscape buffer shall be retained along all rear and side property lines for the installation of landscape material.

Sec. 66-317. – Artificial Turf – Existing.

For those properties where artificial turf is currently installed that is not in compliance with this Chapter, when the existing artificial turf is replaced or repaired, in an amount exceeding 50% or more, then compliance with this section shall be required. Further, all existing artificial turf must be replaced ten (10) years of the adoption of this ordinance.”

Section 2. Severability. If any provision of this Ordinance or the application thereof is held invalid, such invalidity shall not affect the other provisions or applications of this Ordinance which can be given effect without the invalid provisions or applications, and to this end the provisions of this Ordinance are hereby declared severable.

Section 3. Repeal of Ordinances in Conflict. All other ordinances of the Town of Palm Beach, Florida, or parts thereof, which conflict with this or any part of this Ordinance are hereby repealed.

Section 4. Codification. This Ordinance shall be codified and made a part of the official Code of Ordinances of the Town of Palm Beach, Florida.

Section 5. Effective Date. This Ordinance shall take effect immediately upon its passage and approval, as provided by law.

PASSED AND ADOPTED in a regular, adjourned session of the Town Council of the Town of Palm Beach on first reading this ____ day of _____, 2021, and for second and final reading on this ____ day of _____, 2021.

Danielle H. Moore, Mayor

Margaret A. Zeidman, Town Council President

Julie Araskog, Town Council Member

Edward Cooney, Town Council Member

ATTEST:

Lewis S.W. Crampton, Town Council Member

Queenester Nieves, CMC, Town Clerk

Bobbie Lindsay, Council President Pro Tem

ORDINANCE NO. 2019-15

AN ORDINANCE OF THE TOWN OF OCEAN RIDGE, FLORIDA, AMENDING ITS CODE OF ORDINANCES BY AMENDING CHAPTER 1 "GENERAL PROVISIONS", SECTION 1-3 "DEFINITIONS"; AMENDING CHAPTER 66 "ENVIRONMENTAL REGULATIONS", ARTICLE IV "LANDSCAPING", DIVISION 2 "WATER EFFICIENT LANDSCAPE", SECTION 66-141 "WATER EFFICIENT LANDSCAPE CODE"; ENACTING SECTION 66-142 "ARTIFICIAL TURF/SYNTHETIC GRASS" TO PROVIDE FOR REGULATIONS REGARDING ARTIFICIAL TURF/SYNTHETIC GRASS; PROVIDING FOR CODIFICATION, REPEAL OF CONFLICTING ORDINANCES, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, the Town of Ocean Ridge, Florida (the "Town") is a duly constituted municipality having such power and authority conferred upon it by the Florida Constitution and Chapter 166, Florida Statutes; and

WHEREAS, the Town Commission wishes to provide for regulations regarding artificial turf/synthetic grass; and

WHEREAS, the Town Commission has determined that the enactment of this ordinance is for a proper municipal purpose and in the best interests of the residents of the Town.

NOW THEREFORE, BE IT ORDAINED BY THE TOWN COMMISSION OF THE TOWN OF OCEAN RIDGE, FLORIDA, AS FOLLOWS:

SECTION 1 – Findings of Fact: The **WHEREAS** clauses set forth above are adopted herein as findings of fact.

SECTION 2 – Amendment: Chapter 1-"General Provisions", Section 1-3 "Definitions", is amended to read as follows:

Sec. 1-3. - Definitions.

Landscaping means all materials such as, but not limited to, grass, ground covers, shrubs, vines, hedges, trees or palms, and other material such as rocks, pebbles, artificial turf/synthetic grass, walls or fences, and decorative paving materials, all of which are approved by the administrative official.

SECTION 3 – Amendment: Chapter 66 “Environmental Regulations”, Article IV “Landscaping”, Division 2 “Water Efficient Landscape”, by amending Section 66-141 “Water efficient landscape code” to read as follows:

Sec. 66-141. - Water efficient landscape code.

- (a) *Intent and standards.* This water efficient landscape code establishes minimum standards for the development, irrigation, and maintenance of landscaped areas and requires specific water conservation measures, including the preservation of natural vegetation, where applicable.
- (b) *Applicability.* No site plan approval, construction permit or other development order shall be issued for new construction of a single-family or multifamily structure, or the “substantial improvement” of an existing single-family or multifamily structure, as defined in section 1-3 of the land development code, unless the water-efficiency actions included within the landscape plan comply with the provisions hereof, or unless exempted from these provisions. No certificate of completion, use, or use and occupancy shall be issued until the requirements of this division are met.
- (c) *Four-foot landscape minimum.* A minimum four-foot-wide area around the perimeter of the “footprint” of new construction shall receive landscape treatment, as provided herein.
- (d) *Variances.* The town commission, for good cause shown, may grant variances, and conditional or partial exemptions from this land development code.
- (e) *Definitions.* Technical terms used herein shall be as defined in the model xeriscape code promulgated by the South Florida Water Management District.
- (f) *Water efficient landscape standards: established.*
 - (1) *Planning and design.* Site plans shall identify all vegetated areas, including those to be preserved. Installed trees and plant materials shall be grouped together into zones according to water use needs. Installed trees and vegetation shall be located to accommodate their mature size on the site. Unless the tree or other plant material is approved by the respective utility, no trees or other plant materials shall be located or planted in such a manner as to interfere with the use of recorded easements, power or other utility lines or facilities, or the use and maintenance of public rights of way. The water use zones shall correlate to the water use zone designations of plants listed in the Xeriscape Plant Guide II, published by the South Florida Water Management District. Impervious surfaces and materials within landscaped areas shall be limited to borders, sidewalks, step-stones, swimming pools, decks, spas, and other similar features. In no event shall all impervious materials on the lot exceed 40 percent of the total lot area, not including the “footprint” of the house.
 - (2) *Appropriate plant selection.* All landscaped areas shall include plant materials, which are noninvasive and native to the area, as listed in the Xeriscape Plant Guide II, previously cited. A minimum of 50 percent native plants shall be used within the landscaped area. Plants prohibited in section 66-151 of this land development code or which are prohibited elsewhere by this land development code, shall not be incorporated in a landscape plan for any reason, except educational purposes, at the request of a governmental agency.

- (3) *Turf areas.* Turf shall be treated as a major planned element of the landscape plan. The use of drought resistant grass types, including experimental varieties, is permitted. ~~Sod shall normally be required, but large turf areas, not subject to erosion, such as play fields, may be grassed with methods other than sod.~~
- (4) *Efficient irrigation.*
 - a. If required to support plant life, an irrigation system shall be designed to correlate with the organization of plants into zones. The water use zones shall be shown on the landscape plan. Irrigation shall be required as follows: High water use zone shall be provided with central automatic irrigation systems. Moderate water use zones shall be provided with a readily available water supply, such as a hose bib, within 25 feet. Low water use zones shall be provided with a readily available water supply, such as a hose bib, within 50 feet.
 - b. Reclaimed non-potable water may be used for irrigation, if an acceptable source is approved by the Town Commission.
 - c. Moisture sensor and rain shutoff switch equipment shall be required on automatic irrigation systems. The equipment shall consist of an automatic mechanical or electronic sensing device or switch which will override the irrigation cycle of the sprinkler system when adequate rainfall has occurred.
- (5) *Certification.* For each major site plan, a Florida licensed landscape architect, shall conduct a final field observation, and shall provide the administrative official with a certificate of substantial completion, indicating specific compliance with the elements of this land development code.

SECTION 4 – Amendment: Chapter 66 “Environmental Regulations”, Article IV “Landscaping”, Division 2 “Water Efficient Landscape”, by enacting Section 66-142 “Artificial turf/synthetic grass” to read as follows:

Sec. 66-142. – Artificial turf/synthetic grass.

- (a) Minimum material standards. All artificial turf, also referred to as synthetic grass, shall comply with the following minimum standards:
 - (1) Artificial turf shall consist of green lifelike individual blades of grass that emulate natural turf in look and color, as approved by the Town Building Official, and shall have a minimum pile height of one and one-half (1.5) inches, unless otherwise approved by the Town Building Official, and shall have a minimum tufted weight of fifty-six (56) ounces per square yard.
 - (2) Artificial turf installations shall have a minimum permeability of 30 inches per hour per square yard.
 - (3) All artificial turf shall have a minimum eight-year manufacturer's warranty that protects against color fading and a decrease in pile height.
 - (4) Artificial turf shall be lead free.

- (5) All materials must include test documentation which declares that the artificial turf yarn and backing materials are disposable under normal conditions, at any US landfill station (Total Content Leach Protocol (TCLP) test).
- (6) The use of indoor or outdoor plastic or nylon carpeting as a replacement for artificial turf or natural turf shall be prohibited.
- (b) Installation, maintenance and repair.
 - (1) All artificial turf shall, at a minimum, be installed according to the manufacturer's specifications.
 - (2) All artificial turf installations shall be anchored to ensure that the turf will withstand the effects of wind.
 - (3) All seams shall be nailed and glued, not sewn, and edges shall be trimmed to fit against all regular and irregular edges to resemble a natural look.
 - (4) If artificial turf is planned to be installed immediately adjacent to a seawall, the artificial turf shall be pinned or staked behind the seawall. No artificial turf or installation mechanism shall be attached directly to or placed on a seawall or seawall cap.
 - (5) Proper drainage shall be provided for all artificial turf installations to prevent excess runoff or pooling of water.
 - (6) Artificial turf shall be visually level, with the grain pointing in a single direction.
 - (7) An appropriate barrier device (e.g., concrete mow strip, bender board, brick pavers, river rock, landscaping) is required to separate artificial turf from soil and live vegetation.
 - (8) Precautions for installation around existing trees shall be monitored and may be restricted to ensure tree roots are not damaged with the installation of the base material and that the overall health of the tree will not be compromised.
 - (9) All artificial turf shall be maintained in a green fadeless condition and shall be maintained free of dirt, mud, stains, weeds, debris, tears, holes, and impressions. Maintenance shall include, but not be limited to cleaning, brushing, debris removal; repairing of depressions and ruts to maintain a visually-level surface; elimination of any odors, flat or matted areas, weeds, and evasive roots; and all edges of the artificial turf shall not be loose and must be maintained with appropriate edging or stakes.
 - (10) All artificial turf must be replaced if it falls into disrepair with fading or holes or loose areas. Replacement and/or repairs shall be done with like for like materials from the same manufacturer, if possible, and done so in a manner that results in a repair that blends in with the existing artificial turf.
 - (11) An owner or applicant shall obtain a duly-authorized building permit from the Town's building department prior to the installation of any artificial turf.
 - (12) The Town or other public entity or utility company may remove artificial turf at any time and for any reason, including but not limited to, in order to provide

underground access for utility work. The property owner shall bear and pay any and all costs to replace or reinstall the artificial turf.

(c) *Locations allowed.* Artificial turf/synthetic grass shall be allowed in rear and side yards, but not to exceed 25% of the total lot area (this area is defined as the total parcel area defined as a side or rear yard minus the area of the primary structure) of the rear and side yards. Artificial turf/synthetic grass shall not be allowed in any front yard areas or in any area visible from the public right-of-way (regardless of whether it is in the rear or side yard), unless it is placed in between paver blocks or similar items in a manner where the area for the artificial turf does not exceed four (4) inches in width, provided that the synthetic turf area does not exceed 50% of the total area using the paver blocks. Screening, as approved by the building official, may be used in order to comply with the visibility requirement, further any turf/synthetic grass placed in between paver blocks shall not count toward the 25% maximum amount allowed. No artificial turf shall be installed in the public right-of-way.

(d) *Existing artificial turf.* For those properties where artificial turf is currently installed that is not in compliance with this section, when the existing artificial turf is replaced or repaired, in an amount exceeding 50% or more, then compliance with this section shall be required. Further, all existing artificial turf must be replaced within ten (10) years of the adoption of this ordinance.

(e) *Pervious area.* Artificial turf shall be considered as 100% pervious area.

SECTION 5 - Codification: The ordinance shall be codified in the Code of Ordinances of the Town of Ocean Ridge, Florida.

SECTION 6 - Repeal of Conflicting Ordinances: All Ordinances, Resolutions or parts of Ordinances and Resolutions in conflict herewith are hereby repealed.

SECTION 7 - Severability: If any word, clause, sentence, paragraph, section or part thereof contained in this Ordinance is declared to be unconstitutional, unenforceable, void or inoperative by a court of competent jurisdiction, such declaration shall not affect the validity of the remainder of this Ordinance.

SECTION 8 - Effective Date: This Ordinance shall become effective immediately upon adoption.

FIRST READING this 6th day of January, 2020.

SECOND AND FINAL READING this 2nd day of February, 2020.

Commissioner _____ offered the foregoing Ordinance, and moved its adoption. The motion was seconded by Commissioner _____ and upon being put to a vote, the vote was as follows:

ORDINANCE NO. 2013-10

AN ORDINANCE OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AMENDING ARTICLE IX "LANDSCAPE REGULATIONS" OF CHAPTER 30 "ZONING AND LAND DEVELOPMENT REGULATIONS" IN ORDER TO CREATE SECTION 30-242 "ARTIFICIAL TURF" TO PROVIDE FOR REGULATIONS OF THE USE OF ARTIFICIAL TURF; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Village of Key Biscayne (the "Village") has adopted Zoning and Land Development Regulations in order to promote the health, safety, order, convenience, comfort, and general welfare of the public, and to promote and preserve the character and ecological quality of the Village as articulated in the Village's Comprehensive Plan; and

WHEREAS, the Village Council finds that, due to concerns about water consumption by turfgrass, and due to the availability of improved artificial turf products which simulate the appearance of natural turf while providing for water permeability, the use of artificial turf has become more common throughout the State of Florida and property owners within the Village have begun to install artificial turf; and

WHEREAS, the Village Council desires to permit the installation of artificial turf, subject to limitations on usage within front and street side yards, and subject to restrictions intended to ensure that the installation and usage of artificial turf meets minimum standards for installation, placement and ongoing maintenance; and

WHEREAS, the Village Council finds that it is in the public interest to authorize the installation of artificial turf within all areas of Village-owned properties within the PROS Public Recreation and Open Space Use District and the GU Government Use District, so that artificial turf may be utilized within suitable areas of Village parks and recreational areas; and

WHEREAS, the Village Council, sitting in its capacity as the Local Planning Agency, has reviewed this Ordinance and recommends approval; and

WHEREAS, the Village Council finds that the adoption of this Ordinance is in the best interest of the residents of the Village.

NOW, THEREFORE, IT IS HEREBY ORDAINED BY THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS¹:

Section 1. The preceding "Whereas" clauses are ratified and incorporated as the legislative intent of this Ordinance.

Section 2. **Section 30-242 of the Village Code Created.** That Section 30-242 "Artificial Turf" of the Code of Key Biscayne, Florida, is hereby created to read as follows:

Sec. 30-242. Artificial turf.

(a) Definitions. The following words, terms and phrases when used in this section, shall have the meanings ascribed to them in this section:

(1) Corner Lot. A Lot located at the intersection of two streets and abutting such streets on two adjacent sides.

(2) Artificial Turf. An artificial product manufactured from synthetic materials that effectively simulates the appearance of natural turf, grass, sod or lawn.

(b) Installation.

(1) Single Family and Two-Family Districts. Within the VR, VE, IR and PS Districts, Artificial Turf shall not be permitted to be installed within a Front Yard of any Lot, or within a Street Side Yard of a Corner Lot.

¹ Coding: underlined words are additions to existing text, ~~struck through~~ words are deletions from existing text. Changes between first and second reading are indicated with highlight.

(2) Other Districts. Within all other zoning districts with the exception of the PROS Public Recreation and Open Space Use District and the GU Government Use District, Artificial Turf shall not be permitted to be installed within a Front Yard, or within a Side Yard facing a Street.

(c) Installation, maintenance and repair.

(1) No person shall install Artificial Turf without first obtaining a permit from the Village Planning, Building and Zoning Department.

(2) All Artificial Turf shall, at a minimum, be installed according to the manufacturer's specifications.

(4) All seams shall be nailed and glued, not sewn, and edges shall be trimmed to fit against all regular and irregular edges to resemble a natural look.

(5) If Artificial Turf is planned to be installed immediately adjacent to a seawall, the Artificial Turf shall be pinned or staked behind the seawall. No Artificial Turf or installation mechanism shall be attached directly to or placed on a seawall or seawall cap.

(6) Artificial Turf shall be visually level, with the grain pointing in a single direction.

(7) An appropriate solid barrier device (e.g., concrete mow strip, bender board) is required to separate Artificial Turf from soil and live vegetation.

(8) Precautions for installation around existing trees, including a proper radius, shall be provided to ensure that tree roots are not damaged with the installation of the base material and that the overall health of the tree will not be compromised.

(9) All Artificial Turf shall be maintained in a green fadeless condition and shall be maintained free of dirt, animal waste, mud, stains, weeds, debris, tears, holes, and impressions. Maintenance shall include, but not be limited to cleaning, brushing, debris removal; repairing of depressions and ruts to maintain a visually-level surface; elimination of any odors, flat or matted areas, weeds, and evasive roots; and all edges of the Artificial Turf shall not be loose and must be maintained with appropriate edging or stakes.

(10) All Artificial Turf must be replaced if it falls into disrepair with fading or holes or loose areas. Replacement and repairs shall be done with like materials from the same manufacturer and done so in a manner that results in a repair that blends in with the existing Artificial Turf, without any matting.

(11) All Artificial Turf shall be installed on a permeable backing in order to ensure proper drainage.

(12) All Artificial Turf shall be of the highest quality available from a list of Village-approved manufacturers, and shall be a natural green color selected from a palette of colors approved by the Village.

Section 3. Existing Sites. All properties subject to this Ordinance on which Artificial Turf has been installed as of the Effective Date of this Ordinance, shall be deemed legally non-conforming to the extent that the materials, installation or location conflicts with the requirements set forth in Section 30-242 above.

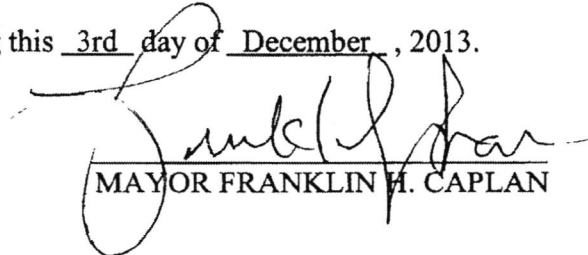
Section 4. Severability. The provisions of this Ordinance are declared to be severable and if any section, sentence, clause or phrase of this Ordinance shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Ordinance but they shall remain in effect, it being the legislative intent that this Ordinance shall stand notwithstanding the invalidity of any part.

Section 5. Conflicts. All ordinances or parts of ordinances, resolutions or parts of resolutions, in conflict herewith, are repealed to the extent of such conflict.

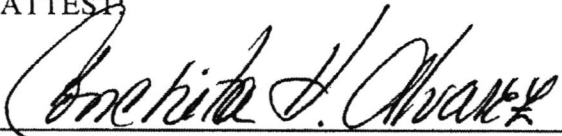
Section 6. Effective Date. That this Ordinance shall be effective immediately upon adoption on second reading.

PASSED on first reading this 12th day of November, 2013.

PASSED AND ADOPTED on second reading this 3rd day of December, 2013.


MAYOR FRANKLIN H. CAPLAN

ATTEST:



CONCHITA H. ALVAREZ, MMC, VILLAGE CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:



VILLAGE ATTORNEY



MIAMI DAILY BUSINESS REVIEW

Published Daily except Saturday, Sunday and
Legal Holidays
Miami Miami-Dade County, Florida

**STATE OF FLORIDA
COUNTY OF MIAMI-DADE:**

Before the undersigned authority personally appeared MARIA MESA, who on oath says that he or she is the LEGAL CLERK, Legal Notices of the Miami Daily Business Review f/k/a Miami Review, a daily (except Saturday, Sunday and Legal Holidays) newspaper, published at Miami in Miami-Dade County, Florida; that the attached copy of advertisement, being a Legal Advertisement of Notice in the matter of

**VILLAGE OF KEY BISCAYNE
PUBLIC MEETING FOR 12/3/2013**

in the XXXX Court,
was published in said newspaper in the issues of

11/21/2013

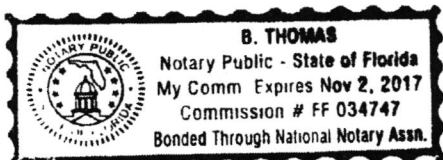
Affiant further says that the said Miami Daily Business Review is a newspaper published at Miami in said Miami-Dade County, Florida and that the said newspaper has heretofore been continuously published in said Miami-Dade County, Florida, each day (except Saturday, Sunday and Legal Holidays) and has been entered as second class mail matter at the post office in Miami in said Miami-Dade County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he or she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper

Sworn to and subscribed before me this

21 day of NOVEMBER, A.D. 2013

(SEAL)

MARIA MESA personally known to me

**VILLAGE OF KEY BISCAYNE****OFFICE OF THE VILLAGE CLERK****PUBLIC NOTICE**

Notice is hereby given that the Village Council of the Village of Key Biscayne, sitting as the Local Planning Agency (LPA), will hold a public hearing meeting on Tuesday, December 3, 2013, at 7:00 p.m., in the Council Chamber, located at 560 Crandon Boulevard, (behind Fire Station) Key Biscayne, Florida, to consider making a recommendation to the Village Council on the following ordinance. The Village Council shall then consider adoption of the ordinance on second reading, at a public hearing, following the completion of the LPA hearing:

AN ORDINANCE OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AMENDING ARTICLE IX "LANDSCAPE REGULATIONS" OF CHAPTER 30 "ZONING AND LAND DEVELOPMENT REGULATIONS" IN ORDER TO CREATE SECTION 30-242 "ARTIFICIAL TURF" TO PROVIDE FOR REGULATIONS OF THE USE OF ARTIFICIAL TURF; AND PROVIDING FOR AN EFFECTIVE DATE.

A copy of the proposed ordinance is available for public inspection and may be obtained at Village Hall, Office of the Village Clerk, 88 West McIntyre Street, Suite 220, Key Biscayne, Florida 33149. Interested parties may appear at the Public Hearing and be heard with respect to the proposed ordinance.

In accordance with the Americans With Disabilities Act of 1990, all persons who are disabled and who need special accommodations to participate in this proceeding because of that disability should contact the Office of the Village Clerk, 88 West McIntyre Street, Suite 220, Key Biscayne, Florida 33149, telephone number (305) 365-5506, not later than two business days prior to such proceeding.

Should any person desire to appeal any decision of the Village Council with respect to any matter to be considered at this meeting, that person shall insure that a verbatim record of the proceedings is made including all testimony and evidence upon which any appeal may be based (F.S. 286.0105):

Comments of any interested party relative to this matter may be submitted in writing or presented in person at the public hearing.

Conchita H. Alvarez, MMC
Village Clerk

11/21

13-4-146/2187299M

Jupiter Inlet - Chapter 4 - Building Regulations

Sec. 4-7. - Landscaping and landscape plans; artificial turf.

(a) *Landscaping and landscape plans:*

- (1) At the time that application is made for a building permit for new construction, a building repair or renovation that has the effect of relocating exterior walls of a structure or a repair or renovation to an existing structure the cost of which exceeds the amounts set forth in Section 9(D)(2) or (4) of Appendix A - Zoning Code, there shall be submitted additionally two (2) copies of landscape plans for the premises. Such landscape plans shall provide for sodding, shrubs, trees or ornamental landscaping conforming generally with that displayed in the community. All plantings will be defined on the landscape plan by both common and scientific name. The applicant shall use native species in landscaping and native dune vegetation when restoring dune systems. South Florida Water Management District Xeriscape practices shall be used in connection with these landscape regulations when considering proposals for development and/or redevelopment. No landscaping shall be installed prior to issuance of a landscape permit by the planning and zoning administrator upon review and approval of the building and zoning committee. No certificate of occupancy shall be issued until all landscaping is in place as set forth on the approved plan and permit.
- (2) Necessary access ways from public rights-of-way through all required landscaped areas shall be permitted to service the open land use.
- (3) All landscaped areas and plantings shall be provided with automatic irrigation facilities.
- (4) In cases where hedges or continuous screening, or a structure already exist on the front property line to a height of at least four (4) feet, no planting strip nor trees shall be required.
- (5) The town shall require the use of native vegetation in landscaping and native dune vegetation in dune areas. South Florida Water Management District Xeriscape practices shall be used in connection with these landscape regulations when considering proposals for development and/or redevelopment.
- (6) Whenever appropriate, existing trees shall be conserved and integrated into the landscaping design plan.

(b) *Artificial turf:*

- (1) The use and location of artificial turf shall be limited to the following:
 - a. Driveways, per subsection 10(J)(4) of Appendix A, Zoning Code;
 - b. On residential lots in the rear yard and side yard areas only, behind the front façade of the adjacent home or structure; or
 - c. As part of a municipal-owned recreation or amenity area.
- (2) Artificial turf proposed under the provision of subsection (1)(a) above shall be installed only pursuant to the procedures and standards set forth in this Chapter. In addition, a property owner or applicant shall obtain a duly-authorized building permit prior to the installation of

any artificial turf.

- (3) In all areas of installation, artificial turf shall be treated as pervious surface area. A minimum two and one-half-foot landscape buffer shall be retained along all rear and side property lines for the installation of landscape material.
- (4) With the exception of those circumstances in which artificial turf is installed pursuant to subsection (1)(a) above, artificial turf shall not be:
- A part of any front yard, measured from the front property line to the front façades of the adjacent home or structure;
 - Visible from a road or street, if necessary, artificial turf in a side or rear yard shall be screened from view by a gate, wall, fence, hedge, or combination;
 - Installed within permanent drainage features or the coastal construction control line (e.g. retention areas, swales).
- (5) Minimum material standards. Artificial turf shall comply with each of the following minimum standards:
- Artificial turf shall consist of green lifelike individual blades of grass that emulate natural turf in look and color.
 - Artificial turf installation systems shall have a minimum water permeability rate of fifteen (15) inches of water per hour per square foot. In addition, all artificial turf systems shall meet the minimum following manufacturers specifications at installation:

Manufacturer Specifications		
Specifications Provide Minimum Allowable Requirements ¹		
Product Properties		
Property	Unit	Description
Standard color	—	Green life-like grass colors
Fiber type	—	100% polyethylene or 100% nylon
Fiber mass	—	TXT thatch, Wave 3D Monofilament, green/tan thatch, or equivalent

Tufted pile height	1½ to 3 inches, unless recreation or pet turf, which shall have a minimum of 1½ inches	Finished pile height
Tufting gauge	¼ inch to ½ inch	ATSM D418
Tufted face weight	60—120 oz./yd. ²	ATSM D418
Primary backing	7 oz./yd. ²	Stabilized dual layered or multi-layered woven polypropylene
Secondary backing	20 oz./yd. ²	Urethane
Total weight	87—147 oz./yd. ²	ATSM D418
Warranty	15 years	Manufacturers warranty
Performance Properties		
Property	Minimum	Description
Permeability	15 inches of water per hour per sq. ft.	Water permeability rate
Installation Requirements - per Manufacturers Specifications²		
Property	Minimum	Description
Infill	2—4 lbs per sq. ft.	Sand/silica, Zeolit, Walnut Shell, Coconut iCoir, or any combination
Aggregate base	2½ inches of ¼ inch aggregate	Leveling layer per local requirements

Geotextile	Optional fabric layer	Per manufacturers specifications
Natural subgrade	Compacted	Per local requirements
Grading and drainage	Grading and drainage plan prepared by a licensed engineer for areas in excess of 500 sq. ft.	Subject to approval by the town engineer
¹ The manufacturers specifications in the table are the minimum allowable requirements for artificial turf in the town. The minimum requirements allow a range in the specifications to provide a variety of selections based on the application of the material.		
² All grading, drainage, storm-water management, aggregate base, and subgrade requirements are per local requirements. Subgrade design and engineering requirements are separate and apart from the manufacturers specifications, which are for the turf components only.		

- c. All **artificial turf** shall have a minimum fifteen-year manufacturer's warranty that protects against color fading and a decrease in pile height.
 - d. **Artificial turf** shall be lead and pesticide free.
 - e. All materials must include test documentation that declares all **artificial turf** yarn and backing materials are disposable under normal conditions, at any U.S. landfill station (Total Content Leach Protocol (TCLP) test). Documentation must also be provided that identifies all components are 100 percent recyclable.
 - f. The use of indoor or outdoor plastic or nylon carpeting as a replacement for **artificial turf** or natural turf shall be prohibited.
- (6) Installation, maintenance and repair.
- a. All **artificial turf** shall, at a minimum, be installed according to the manufacturer's specifications.
 - b. All **artificial turf** installations shall be anchored to ensure the turf will withstand the effects of high wind(s).
 - c. All seams shall be secured and edges shall be trimmed to fit against all regular and

irregular edges to resemble a natural look.

- d. If artificial turf is planned to be installed immediately adjacent to a seawall, the artificial turf shall be pinned or staked behind the seawall. No artificial turf or installation mechanism shall be attached directly to or placed on a seawall or seawall cap.
- e. Proper drainage shall be provided for all artificial turf installations to prevent excess runoff or pooling of water.
- f. Artificial turf shall be visually level, with the grain pointing in a single direction.
- g. An appropriate solid barrier device (e.g. concrete mow strip, bender board) is required to separate artificial turf from soil and live vegetation.
- h. Precautions for installation around existing trees shall be monitored and may be restricted to ensure tree roots are not damaged with the installation of the base material and that the overall health of the tree will not be compromised.
- i. All artificial turf shall be maintained in a green fadeless condition and shall be maintained free of dirt, mud, stains, weeds, debris, tears, holes, and impressions. Maintenance shall include, but not be limited to, cleaning, brushing, debris removal; repairing of depressions and ruts to maintain a visually-level surface; elimination of any odors, flat or matted areas, weeds, and invasive roots; and all edges of the artificial turf shall not be loose and must be maintained with appropriate edging or stakes.
- j. All artificial turf must be replaced by the property owner if it falls into disrepair with fading, holes, or loose areas. Replacement and/or repairs shall be done with like for like materials and in a manner that results in a repair that blends-in with the existing artificial turf.

(Ord. No. 02-2019, § 2, 6-11-19; Ord. No. 03-2019, § 1, 9-9-19)

Jupiter Inlet-Zoning Code - Appendix A

Section 10. - Restrictions Upon Lands, Building, and Structures.

- (A) *Use.* No building, fence, grading, wall, walk, pier, dock, sea wall or other structure, shall be commenced, erected, maintained, moved, altered or added to until the plans and specifications showing the nature of such structure or work to be done, and the grading plan of the lot to be built upon have been submitted to the town clerk, and approved by the building official, or his/her designee, and a permit issued. No land, building structure or premises shall be designed or intended to be used for any purpose or in any manner other than as permitted by this Code or amendments thereto.
- (B) *Height.* No building or structure shall be erected nor shall any existing building or structure be moved, reconstructed or structurally altered to exceed the height limit established by this Code or amendments thereto. Functional chimneys, faux chimneys, non-habitable cupolas, and flag poles may be erected above the height limits, herein established with the approval of the building official. However, the heights of these structures or appurtenances thereto shall not exceed the height limitations prescribed by the Civil Aeronautics Agency with the flight approach pattern of airports and shall not exceed the height of allowed functional chimney for the respective structure as prescribed by the Florida Building Code.
- (C) *Percentage of Lot Occupancy.* No building or structure shall be erected, nor shall any existing building or structure be moved, altered, enlarged, or rebuilt, nor shall any open spaces surrounding any building or structure be encroached upon or reduced in any manner, except in conformity with the building site requirements and yard regulations established by this Code or amendments thereto. In order to minimize the effect on natural environment conditions, maximize surface water drainage and run off, and controlling building mass and density, the following development standards shall apply:
- (1) For a one-story residence, a maximum of fifty (50) percent of any lot area may be developed; provided the owner(s) of the real property may develop a maximum of sixty (60) percent of the lot area on the condition that the owner(s) execute and deliver to the town a deed restriction, in recordable form, covenanting that the structure(s) shall not be renovated or improved in any manner so as to add a second story to the structure(s) unless the maximum lot occupancy is reduced to fifty (50) percent or less. Said deed restriction shall run with the land and be binding on the heirs, successors and assigns of the owner(s). An owner(s) of a single story residence existing on the effective date of this appendix may increase the lot occupancy to no more than sixty (60) percent of any lot area provided the owner(s) complies with the provisions in this section.
 - (2) For a two-story residence, a maximum of fifty (50) percent of any lot area may be developed.
 - (3) Developed, for purposes of this section, shall include pools, patios, porches, ponds, concrete pads, stepping stones, concrete walls, seawalls, walks, walkways, pathways, driveways, parking areas, and similar paved or impervious areas, except as provided herein. Walks, driveways, and parking areas composed of any material, shall be included in the calculation of lot occupancy.
 - (a) For the purposes of this section, the following shall not be included in the calculation of lot occupancy:
 - (i) Boundary walls with a width of no greater than nine (9) inches and a cap width of no greater than twelve (12) inches;
 - (ii) Seawalls with a cap width of no greater than twenty-four (24) inches;
 - (iii) Equipment pad(s) up to a maximum of one hundred (100) square feet per lot or property; and
 - (iv) A single path of stepping stones or pavers laid in a pattern less than or equal to two (≤ 2) feet in width, and less than or equal to four (≤ 4) square feet in area per stone or paver.
 - (b) In the event a wall, seawall, equipment pad(s), or stepping stones exceeds the above-referenced dimension or threshold, then the area in excess of the specified dimension or threshold shall be included

in the calculation of lot occupancy.

- (4) No less than thirty (30) percent of the front yard of every residence with a lot area less than or equal to eleven thousand (11,000) square feet shall be planted with landscape material; no less than fifty (50) percent of the front yard of every residence with a lot area greater than eleven thousand (11,000) square feet and less than twenty thousand (20,000) square feet shall be planted with landscape material and no less than seventy (70) percent of the front yard of every residence with a lot area of twenty thousand (20,000) square feet or greater shall be planted with landscape material. Pebbles, gravel, and stones used as ground cover between botanical materials in accordance with section 19-2 of the Code of Ordinances may be included in the calculation of required residential landscaping.
- (D) *Open Space Use Limitation.* No yard or open space provided about any building or structure for the purpose of complying with the regulations of this resolution [Appendix A, Zoning Code] or amendments thereto shall be considered as providing a yard or open space for any other building or structure.
- (E) *Required Lot and Occupancy.* Every building or structure hereafter erected shall be located on a lot or parcel of land; and in no case shall there be more than one (1) main building and its accessory buildings on one (1) lot except as hereinafter provided.
- (F) *Occupancy Limitations.* Every residence shall be used only as a single-family dwelling. (Family as defined in this Code.) Only one (1) kitchen unit is permitted in the habitable space per dwelling and no business activity is permitted except as allowed under the definition of home occupation.
- (G) All residential lots shall develop consistent with the low density classification (0—5.0 dwelling units/acre) established on the future land use map in the future land use element of the adopted Town of Jupiter Inlet Colony's Comprehensive Development Plan. In accordance with the low density classification, no more than one (1) single family residence shall be constructed on a platted lot of record.
- (H) *Conservation Uses.* The submerged lands within the Intracoastal Waterway shall be in conservation use as depicted on the future land use map in the future land use element of the adopted Town of Jupiter Inlet Colony's Comprehensive Development Plan. Conservation use shall be defined as: "activities within land areas designated for the purpose of conserving or protecting natural resources or environmental quality and includes areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water, floodplain management, fisheries management, or protection of vegetative communities or wildlife habitats."
- (I) *Off-Street Parking Nonresidential.* These regulations apply to parking areas for all nonresidential uses throughout the town:
 - (1) For the purpose of this section, the term "off-street parking space" shall consist of parking space having minimum dimensions of ten (10) feet in width by twenty (20) feet in length for the parking of each motor vehicle, exclusive of access drives or aisles thereto. The parking plan shall be so arranged that each motor vehicle may be replaced and removed from the parking spaces assigned thereto and taken to and from the property without the necessity of moving any other motor vehicle to complete the maneuver.
 - (2) Required yards and setbacks may not be used for off-street parking. Access drives or aisles and turning spaces shall be located within the lot lines. Except as dedicated or as driveways to parking structures, streets, public rights-of-way, easements or sidewalk areas shall not be used for off-street parking purposes.
 - (3) Where a parking space is provided in open areas adjacent to or beneath any building, structure or portion thereof, such parking spaces shall have a solid surface.
 - (4) Parking spaces for persons with disabilities shall be provided in all required parking lots pursuant to state and federal laws regulating the same. Such spaces shall not be in addition to, but shall substitute for,

required parking.

- (5) There shall be provided at the time of the erection of any main building or structure, or at the time that any main building or structure is enlarged by more than twenty-five (25) percent of the square footage of the existing building or structure, minimum off-street motor vehicle parking space with adequate provisions for ingress and egress by a motor vehicle of standard size, in accordance with the following:
 - (a) *Public buildings and grounds:* One (1) space for each two hundred (200) square feet of gross floor area.
 - (b) *Private or community owned clubs and associations:* One (1) space for each three hundred (300) square feet of gross floor area.
- (6) *Miscellaneous provisions.*
 - (a) Parking spaces for all permitted uses shall be located on the same lot with the main building or structure to be served.
 - (b) The plan for off-street parking areas shall be subject to the approval of the town commission.
 - (c) The minimum parking space size, aisle width and driveway width shall be based upon the degree of angle of the individual parking space and shall be in accordance with the Minimum Parking Bay Dimensions by Parking Angle and Parking Bay Illustrations, as established within the Palm Beach County, Florida, Unified Land Development Code, and all other provisions of this section.
 - (d) Each parking space shall be marked either by painted lines, pre-cast curbs, or in a similar fashion so as to indicate the individual parking spaces.
 - (e) Each parking space shall be a solid surface consisting of one (1) of the following materials:
 - (i) Asphalt;
 - (ii) Concrete;
 - (iii) Paver stone;
 - (iv) Other permeable materials including gravel;
 - (v) Other solid surface approved by the town commission.
 - (f) All off-street parking facilities shall be drained so as not to cause any nuisance or detriment to adjacent private or public property through the use of on-site control techniques for stormwater run-off, such as, but not limited to, permeable surfaces, French drains, catch basins, swales, etc. or other accepted methods of stormwater runoff control.
 - (g) Loading space, off-street. Off-street loading/delivery space logically and conveniently located for bulk pickups and deliveries, at a size as provided for in this paragraph, and accessible to such vehicles when required off-street parking spaces are filled shall be provided. Required off-street loading spaces of two (2) per principal use are not to be included as off-street parking space in the computation of required off-street parking. The size of a required loading space shall not be less than twelve (12) feet by twenty-five (25) feet with a vertical clearance of not less than fourteen (14) feet.
 - (h) Each parking site or lot shall be designed individually with reference to the size, street pattern, adjacent properties, buildings, and other improvements in the general neighborhood, number of motor vehicles to be accommodated, hours, and kinds of use.
 - (i) Landscaping for all parking areas shall be provided in accordance with section 4-2 of the Town Code.
- (j) *Off-Street Parking Residential.* These regulations apply to all residential uses throughout the town:
 - (1) Each single-family dwelling shall provide a driveway and no less than two (2) parking spaces per dwelling. Such parking spaces may be located on a driveway.

NEW BUSINESS #2

- (2) All driveway(s) and parking area(s) shall be constructed so as to not encroach on side or rear setbacks; provided driveway may encroach one (1) side yard setback on a lot with a lot area of eleven thousand (11,000) square feet that conforms to section 10(C)(1) of the Zoning Code.
 - (a) The driveway shall be setback a minimum of two (2) feet from the side property line.
 - (b) The driveway shall not encroach an easement without a signed release from the easement holder.
 - (c) All driveways with a permit issued by the town that are located in a side or rear setback, as of the effective date of this ordinance, shall be considered conforming for the purposes of section 9(D) of the Zoning Code, nonconforming structures.
- (3) All driveways and parking areas shall consist of one (1) or a combination of the following materials:
 - (a) Concrete;
 - (b) Paver stones or bricks;
 - (c) Gravel, crushed rock, crushed shells, shell rock, pea rock, turf, artificial turf, or turf block.
- (4) Turf, artificial turf, or turf block.
 - (a) No portion of the outermost border of a driveway or parking area shall consist of turf, artificial turf, or turf block.
 - (b) No more than thirty (30) percent of a driveway or parking area shall consist of turf, artificial turf, turf block, or a combination thereof.
 - (c) No area of a driveway or parking area consisting of turf, artificial turf, or a combination thereof, shall exceed thirty-six inches (36) in width.
 - (d) Artificial turf or turf block utilized in a driveway or parking area shall have a hardscape underlayment suitable to support the weight of a vehicle.
 - (e) A driveway or parking area designed to park or store vehicles exclusively on turf is prohibited.
 - (f) Driveway(s) and parking areas shall be drained so as to not cause any nuisance or detriment to adjacent private or public property through the use of on-site control techniques for stormwater run-off, such as, but not limited to permeable surfaces, French drains, catch basins, swales or other accepted methods of stormwater run-off control.
 - (g) Landscaping adjacent to all parking areas shall be provided in accordance with section 4-2 of the Town Code.
- (K) *Coastal Vegetation.* Development and redevelopment in the coastal area, as defined in the Town of Jupiter Inlet Colony's Comprehensive Development Plan, that will adversely impact wetland vegetation including sea grasses, mangroves and the dune system, marine and wildlife habitats and coastal resources is prohibited.
- (L) *Single-Family Attached Residence.* All single family resident structures and accessory buildings will be attached except where otherwise allowed by this Code for detached parking garage and bathhouses.

(Ord. No. 221-132-87, § 1, 3-6-06; Ord. No. 239-150-105, § 1, 7-13-09; Ord. No. 07-2016, § 6, 1-11-17; Ord. No. 02-2017, § 4, 5-8-17; Ord. No. 05-2017, § 4, 9-11-17; Ord. No. 04-2018, § 4, 3-29-18; Ord. No. 06-2018, § 3, 5-14-18)

TOWN OF PALM BEACH

Information for ORS Committee Meeting: July 1, 2021

TO: Ordinance, Rules and Standards Committee

VIA: Jay Boodheshwar, Deputy Town Manager

FROM: H. Paul Brazil, P.E., Director of Public Works

RE: Town of Palm Beach Truck Regulation Study

DATE: June 11, 2021

STAFF RECOMMENDATION

Town Council has requested the Ordinance, Rules, and Standards (ORS) Committee to consider the recommendations found in the Town of Palm Beach Truck Regulation Study.

GENERAL INFORMATION

On September 10, 2019, the Town Council authorized a purchase order for Engineering Services to Kimley-Horn and Associates, Inc. (KHA) for the study and development of a truck traffic regulation plan. This action was the culmination of years of discussions about the challenges of large trucks trying to navigate safely without causing property damage or traffic impacts.

The report provides an analysis of truck volumes and circulation patterns within the Town. A review of Florida municipalities that have implemented truck restrictions is also included. Based on these analyses, a truck restriction plan was developed and outlined in the report along with recommendations for codification, education, and enforcement to allow for limiting large trucks to enter restricted areas.

The draft report was presented to the Public Works Committee at the October 22, 2020 meeting. Modifications were made and the report was finalized. For reference, the Public Works Committee minutes are attached. Staff determined that since the report had not been presented to Town Council it would be appropriate to seek Town Council direction prior to presenting to the ORS Committee.

The Truck Study was presented to Town Council at the June 8, 2021 meeting. After discussion Town Council requested the study to be presented to the ORS for consideration. Attached are portions of the report documenting the codes and ordinances found in other municipalities, along with the recommendations section.

Attachments

cc: Kirk W. Blouin, Town Manager
Eric B. Brown, P.E., Assistant Director of Public Works
Patricia Strayer, P.E., Town Engineer

TRUCK REGULATION STUDY

TOWN OF PALM BEACH, TRUCK STUDY PALM BEACH, FL

PREPARED FOR:
TOWN OF PALM BEACH

Kimley»Horn

March 2020
Revised May 2020
Kimley-Horn Project #044063244
CA 00000696
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TRUCK REGULATION STUDY

TOWN OF PALM BEACH, TRUCK STUDY PALM BEACH, FL

Prepared by:
Kimley-Horn and Associates, Inc.
West Palm Beach, Florida



March 2020
Revised May 2020
Revised November 10, 2020
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CASE STUDY REVIEW

An exhaustive review of municipalities within Florida which have implemented truck restrictions was performed. Reviews of resolutions and ordinances in many municipalities was performed, including but not limited to:

- Sanibel
- Jupiter Island
- Miami Beach
- Fort Lauderdale
- Longboat Key
- Sarasota
- Fernandina Beach
- Delray Beach
- Boca Raton

In general, it was determined that many municipalities have developed plans and implemented enforcement of truck *parking* and *loading*, but very few have implemented restriction plans for the movement of trucks through neighborhoods and on specific streets. In some areas, truck routes have been developed to direct trucks around certain areas, but no actual restriction is established. Only three municipalities were determined to have truck regulation plans that weren't specifically limited to parking or loading. A summary of a these examples is included.

City of Tampa

The City of Tampa has established truck routes throughout the central part of the City. Truck routes were approved by Ordinance in 2011 and updated in 2016. The purpose of the truck route study was, similar to the intent of the Town, to balance the needs of commerce and truckers with the desire to be sensitive to certain land uses and neighborhoods.

Truck routes were established in the City. Any truck driver that is determined to be in violation of using designated truck routes (i.e. by using a local neighborhood street) is subject to a civil violation, similar to a parking ticket, if the driver cannot provide evidence of need for travelling off of designated truck routes.

Per Tampa's Code of Ordinances:

All regulated trucks within the city shall be operated only over and along the designated truck routes established in subsection (a) above.

Enforcement is also established in the Code:

...[T]he driver of a regulated truck may travel over and along a street not designated as a truck route only as necessary whereto perform its business its destination lies on or within in a manner that minimizes the distance traveled over and along the non-truck route street, or as necessary to perform its business, in a manner that minimizes the distance traveled over and along the non-truck route street.

An advantage of this type of restriction plan is that government resources are not burdened by pre-approving certain types of trucks, or types of trucks for certain events; a truck driver must simply convince an officer that they are required to circulate on local streets to perform their duties. A disadvantage of this system is that there is little incentive for trucking companies to change their routing or types of trucks to accommodate the nature of the street network, and little can be done to prevent damage to private property if officers allow large trucks to continue to operate. Once a truck enters a neighborhood with narrow streets, it may have to physically damage private property to turn and exit the neighborhood.

City of Jacksonville

The City of Jacksonville recently adopted a truck routing ordinance in 2019. Much like Tampa, the City adopted a map identifying truck routes, does not specifically prohibit trucks from any roadway, and establishes the ability to ticket truck drivers not using designated routes. Deliveries are still allowed on local streets.

City streets are designated as Blue (preferred truck route), Gray (non-regulated) and Red (restricted for trucks except deliveries). Jacksonville's Code regulates trucks on red routes:

The driver of a regulated truck may travel on a Restricted Road (Red) for the primary purpose of delivery and pickup. The driver of the regulated truck must return to the Preferred (Blue) or non-regulated (Gray) truck route network by the shortest possible distance after completion of the delivery and/or pickup.

If the driver is observed on the Red route by an officer, the following Code applies:

Any person driving or in charge or control of any regulated truck operating on a Restricted Road (Red) shall be prepared to present for the inspection to the Jacksonville Sheriff's Office ("JSO") officers, the truck's log book, weight slips, delivery slips, or other written records of the regulated truck's origin and destination to justify the operation on the Restricted Road (Red).

Like Tampa's truck routing system, the decision to enforce truck routing falls to police enforcement, and only once a truck has travelled on restricted road.

City staff indicated that they would not sign each individual street or neighborhood discouraging trucks but would assess the situations on individual bases based on resident complaints.

St. Augustine

The City of St. Augustine has a truck restriction plan in place in their downtown historic district. This plan expressly prohibits trucks on certain roadways. Unlike Tampa and Jacksonville, certain streets are expressly prohibited for use by trucks, without exception for local deliveries; all trucks can be cited. Any truck needing to travel the prohibited streets must get a permit to do so. The City's Code specifically states:

It shall be unlawful for any person to operate any motor vehicle having a greater length than twenty-four (24) feet or greater width than eight (8) feet or greater height than eight (8) feet upon any of the following designated narrow streets or portions thereof of the city without a permit from the chief of police as hereinafter provided; provided that this section shall not be applicable to any authorized public service vehicle, nor shall the same be applicable to any franchised sight-seeing motor vehicles.

St. Augustine's restriction was based on physical constraints of the City's narrow streets, with limited turning ability for larger vehicles, whereas most other truck restriction plans were developed to reduce cut-through trips, or trips within residential areas. Much like St. Augustine, the Town has narrow streets in the residential areas with limited ability for larger vehicles to turn. Based on observation, the trucking industry has adapted to the restriction, since no vehicles larger than a delivery van were observed in the area. Furthermore, this area serves a large tourist population, with many restaurants and retail shops; therefore, deliveries occur in this area on a consistent basis.

The City of St. Augustine allows the Chief of Police to issue permits as necessary to allow larger trucks in the restriction area:

The chief of police is hereby authorized to issue special permits, in writing, under the provisions of F.S. § 316.550 and shall charge therefor such fees as shall have been set by the city manager pursuant to the provisions of section 2-74 and as shall be consistent with the provisions of F.S. § 316.550.



Figure 1: Narrow Street with Truck Restriction in St. Augustine



Figure 2: Example of Truck Restriction Sign in St. Augustine



Figure 3: Truck Restriction Informational Sign

RECOMMENDATIONS

Based on our review of truck volumes, the ability of trucks to maneuver local streets, observed damage to private property, and a review of Florida municipalities with similar street networks, it is recommended to restrict trucks on certain Town streets. This recommendation is intended to mitigate damage to private property, eliminate congestion due to the inability of certain trucks to maneuver certain streets, and provide a mechanism for permit and enforcement of truck traffic in certain areas of Town. The data collected confirms that trucks are circulating within residential areas of Town, as noted by high numbers of trucks north of Royal Poinciana Way in comparison with expected volumes for a residential area. Truck volume percentages in the residential areas of the north end are higher than in the commercial parts of Town. Review of the specific turning movement counts indicates that many of the trucks in the north end are arriving via the north bridge.

Florida Statute provides guidance on establishing restriction of trucks on local roads. Per FS 316.008:

(1) The provisions of this chapter shall not be deemed to prevent local authorities, with respect to streets and highways under their jurisdiction and within the reasonable exercise of the police power, from:

(n) Prohibiting or regulating the use of heavily traveled streets by any class or kind of traffic found to be incompatible with the normal and safe movement of traffic.

Description of the Recommended Restriction

Figure 16 illustrates the recommended physical boundaries of the truck restriction. It is recommended to implement broad area-wide restrictions rather than street-by-street restrictions; if only certain streets in a part of Town are restricted, trucks would use the non-restricted streets in larger numbers. In residential areas such as the north end, certain residents would see an increase in trucks on their street if their street was the non-restricted street. Area-wide restrictions also require less signage and are easier to understand by truckers. Without an area-wide restriction, individual streets would have to be signed restricting trucks, leading to sign clutter. It should be noted that the following roads will have NO Town-imposed restrictions:

- Royal Poinciana Way west of North County Road
- County Road between Royal Poinciana Way and South Ocean Boulevard

Permitting of Exceptions

In certain cases, there may be a need for restricted vehicles to utilize the restricted streets. An example of this would be the need for a construction crane to access a private residence on a residential street. Another example could be a small combination truck that is needed to access a commercial property to deliver items that are too large for smaller delivery trucks. The Town should establish a permitting process to allow for special circumstances. As part of the process, the applicant should provide:

- Explanation/Narrative of the request
- Explanation of why smaller trucks cannot be used. The applicant must demonstrate that smaller, more frequent trucks cannot be used due to the nature of the delivery or equipment, or that more frequent trips will negatively impact the neighborhood.
- A routing plan that demonstrates that the truck movements will not impact private property.
- A plan for restoration of private property in case of damage.

The Town could then issue a permit listing types and numbers of vehicles allowed, allowable times and days of operations, and expiration (if any). The applicant will be required to pay for staff burden costs, any citations for operating outside of the conditions of the permit and restoration of private property.

Codification

Based on a review of other municipalities in Florida, the truck restrictions should be placed in the Town's Code of Ordinances by means of Resolution. The Code should include the following elements:

- Definition of the restriction, including types of trucks (defined by length) that are restricted.
- A map of the restricted area.
- Any exclusions to the restriction; possible exclusions to the restriction include emergency vehicles and municipal services vehicles.
- Mechanism for citation
- Permitting process for exceptions

The Code update will be subject to the Town's process for amending the Code of Ordinances.

Education

The Town should develop an educational campaign to educate stakeholders, including residents, business, and trucking companies, of proposed restrictions. The goal should be to reach the widest range of potential drivers. It should be noted that the input from stakeholders is imperative to determining if restrictions should be enacted, and what scope the ultimate restrictions should encompass.

The Town should publicly notice proposed restrictions in visible locations to drivers throughout Town prior to implementation. Although it is recognized that not every truck driver entering the Town will know in advance of new restrictions, every effort should be made to educate the highest number of drivers as possible. Nonetheless, a grace period between adoption of a Code and initial citations should be considered.

TOWN OF PALM BEACH

Information for ORS Meeting on: July 1, 2021

To: ORS Members

Via: Jay Boodheshwar, Deputy Town Manager

From: Wayne Bergman, Director of Planning, Zoning & Building

Re: Native Landscaping

Date: June 23, 2021

BACKGROUND

The Town Council adopted Ordinance No. 21-2018 on April 9, 2019. This ordinance amended Chapter 66, Natural Resource Protection, with regards to vegetation. The amendments included modified and new definitions, modifications to the purpose and intent of the vegetation article, and modified the design requirements of landscape projects. This ordinance added for the first time a minimum requirement of 25% native plants for new landscape projects.

This was a good step forward in requiring native landscaping to be part of every new landscape project. Native plants, although defined differently by many communities, basically are plants that naturally occur in this part of Florida, and do not require direct human interaction to grow. They are generally resistant to pests and require minimum moisture / irrigation to survive.

Once adopted, landscape designers began immediately providing simple data tables on their landscape plans that show the required 25% native landscape and the actual native landscape, which in every case equaled or exceeded the 25%. As staff worked with this new requirement on minimum native landscaping, it became clear that more work was required on the code to provide the details of native landscape calculations, and what plant material was to be included in the calculation measurement. As these items were reviewed, the actual native lists were examined, as there are many native plant lists that deal with South Florida. The need became clear that the new requirement raised more questions than answers, and staff and the Town Council worked last year to place this item before the ORS Committee.

GENERAL INFORMATION

Staff's study focused primarily on four general areas of review. The first area reviewed was the 25% requirement, and how the 25% should be calculated, and which plant classes are included in the count. The second review area was whether the arbitrary 25% is the appropriate percentage for the Town to require, and whether different percentages could be applied to different plant classes. The third area of review were the native landscape plant "lists" available to use and to try to identify which list best suits Palm Beach. Finally, the fourth area will be a full review of Chapter 66 to make certain that it is complete, consistent and not in conflict with other code regulations.

These studies started with a review of neighboring communities and an examination of their codes relative to the native landscaping. Staff also found the "Model Native Plant Landscape Ordinance Handbook", produced by the Florida Native Plant Society. Staff looked at several native plant lists, and spoke with several local landscape design professionals to get their thoughts on the best possible way to deal with the Town's desire to improve and resolve conflict with the native plant regulations.

Staff did their level best to put this memo and packet together based on facts. It is based on notes, emails, phone calls, and meetings that have taken place over the past year. We trust that all details are accurate and reflective of past conversations.

1. HOW TO CALCULATE THE TWENTY-FIVE PERCENT (25%) NATIVE REQUIREMENT

The first area of review was to look at the existing 25% native requirement and try to understand how this is quantified. The primary question that should be addressed is how the 25% metric is calculated. Does this mean 25% of the landscape area must be native, or 25% of the number of new plants must be native? Other questions remain, such as if the 25% represents area coverage, is it calculated at the time of plant material installation, or at maturity? Does it include only newly planted landscape areas, or the total landscaped area of a lot (some of the lot are may be untouched during the project)? Do you count the plants or coverage of shrubs located under a native tree canopy? How can staff or Commissioners determine if the 25% requirement is met if we have no common understanding of how the 25% is calculated?

Over the last year staff reached out to six local landscape design professionals to speak about this matter. Only two of them provided strong opinions on the best way to calculate the native requirement. Richard Rutledge, with Innocenti & Webel Hobe Sound, strongly favored counting the trees and shrubs. Keith Williams, with Nievera Williams Palm Beach, likes the area coverage approach. Most of the municipal ordinances reviewed were silent on how the calculation is performed. The Model Native Plant Landscape Ordinance Handbook suggests using area coverage.

2. IS THE TWENTY-FIVE PERCENT (25%) NATIVE REQUIREMENT SUFFICIENT

The next item reviewed was whether the Town requirement of 25% natives was sufficient, especially when compared to other municipalities that enacted native landscape regulations. Here is a simple comparison of required native plants in several (19) South and Central Florida communities:

MUNICIPALITY	NATIVE LANDSCAPE REQUIREMENT		MUNICIPALITY	NATIVE LANDSCAPE REQUIREMENT
Brevard County	50%		Dade County	30%
Indian River County	50%		Islamorada	75%
Key Colony Beach	50%		Key West	70%
Lee County	50% to 75%		Manalapan	50%
Manatee County	30%		Marathon	70%
Martin County	50%		Miami	30%
Monroe County	10% to 70%		Ocoee	40%
Pasco County	30%		Polk County	Recommended
Sanibel	75%		St. Lucie County	50% to 100%
West Palm Beach	65% (Point-Based)			

Many communities do not have native landscape requirements at this time. Some communities set differing minimum requirements for different classes of plants, such as Lee, St. Lucie, and Monroe Counties. Trees, palms, shrubs, vines, and ground cover could all have different native minimum requirements. Richard Rutledge suggested this practice for Palm Beach, especially for trees and shrubs.

Copies of neighboring codes are attached for your review. Each community takes a different approach to setting their landscape regulations. Raymond Jungles favors the regulations in Monroe County. Keith Williams likes the Martin County regulations and the point-based systems.

3. WHICH NATIVE LANDSCAPE LISTS SHOULD BE USED

The current Town Code found in Chapter 66 references a number of plant lists found in Florida. Section 66-2, Definitions, uses the University of Florida Atlas of Vascular Plants to help define "Native Plant Species". This atlas is now called the Atlas of Florida Plants by the Institute for Systemic Botany, and can identify native plants by county. Section 66-212, Purpose and Intent, references the most current Florida Exotic Pest Plant Council's List of Invasive Plant Species. Section 66-285 mentions three other lists, the Xeriscape Plant Guide by the South Florida Water Management District, the "county list" (not clear what this is referencing), and the "regional list" (not clear what this is referencing).

Copies of many of these lists are attached for your review.

Raymond Jungles and Susan Lerner both liked the native plants list from the Institute for Regional Conservation, Natives for Your Neighborhood, which online can be filtered by zip code. <https://regionalconservation.org/beta/nfyn/default.asp> Susan Lerner, Richard Rutledge and Keith Williams liked the list prepared by the Florida Native Plant Society, Native Landscape Plants for Your Area. <https://www.fnps.org/plants> Jorge Sanchez last year mentioned that he liked the South Florida Water Management District Waterwise Guide. https://www.sfwmd.gov/sites/default/files/documents/ww0_waterwise_all.pdf

There are minor differences between the lists as to what plant species are truly native.

4. OTHER CODE MATTERS REGARDING NATIVES

The final part of this review is to make certain that the balance of the native regulations are still relevant and understandable. I included the Model Native Plant Landscape Ordinance Handbook as a resource for this discussion, as the draft ordinance contained within the handbook speaks to a complete native program, including invasive plants. The ORS Committee may wish to review the draft ordinance in the handbook and determine if the Town Code (Chapter 66) could or should be amended to include any other native landscape provisions mentioned in the draft ordinance.

In closing, Susan Lerner spent a lot of her time helping staff sort through the issues and possible solutions. She also drafted a simple form that can be used for the review of landscape plans in the near future for land use projects going before Arcom, Landmarks and Town Council. That form (spreadsheet) is attached.

Attached:

- Ordinance No. 21-2018
- Landscape Codes for: Brevard, Dade, Indian River, Lee, Manatee, Martin, Monroe, Pasco, Polk, and St. Lucie Counties; and the municipalities of Islamorada, Key Colony Beach, Key West, Manalapan, Marathon, Miami, Ocoee, Sanibel, and West Palm Beach
- Florida Exotic Pest Plant Council's List of Invasive Plant Species
- Atlas of Florida Plants by the Institute for Systemic Botany
- Institute for Regional Conservation, Natives for Your Neighborhood
- Florida Native Plant Society, Native Landscape Plants for Your Area
- South Florida Water Management District Waterwise Guide
- Model Native Plant Landscape Ordinance Handbook
- Landscape Review Form

ORDINANCE NO. 21-2018

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AMENDING THE CODE OF ORDINANCES OF THE TOWN OF PALM BEACH AT CHAPTER 66, NATURAL RESOURCE PROTECTION, AT ARTICLE 1, IN GENERAL, SECTION 66-2, DEFINITIONS; AT ARTICLE IV, VEGETATION, SECTION 66-212, PURPOSE AND INTENT; TO INCLUDE A NEW SECTION 66-285, GENERAL UNDER DIVISION 4, DESIGN REQUIREMENTS; AMENDING SECTION 66-286, WATER CONSERVING LANDSCAPE DESIGN; AND AMENDING SECTION 66-311, PROHIBITED PLANTS; PROVIDING FOR SEVERABILITY; PROVIDING FOR REPEAL OF ORDINANCES IN CONFLICT; PROVIDING FOR CODIFICATION; PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AS FOLLOWS:

Section 1. The foregoing recitals are hereby ratified and confirmed.

Section 2. The code of Ordinances of the Town of Palm Beach is hereby amended at Chapter 66, Natural Resource Protection; Article I, In General; Section 66-2, Definitions, to read as follows:

“Sec. 66-2. - Definitions.

The following words, terms, and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

DSH means diameter at standard height (4.5 feet or 1.37 meters) measured from the top of rootball.

~~Evapotranspiration-based controller means an irrigation controller that calculates soil moisture from known weather and related inputs, as follows:~~

- ~~(1) Receives and monitors weather data or on-site environmental conditions;~~
- ~~(2) Calculates the amount of moisture input to and moisture lost from the soil and plants;~~
- ~~(3) Automatically creates or adjusts the irrigation schedule to apply only the amount of water necessary to maintain adequate soil moisture.~~

Hat racking means the removal of main stems, tops of trees, or a significant percentage of tree canopy, generally by cross-cutting the main stem(s) or leaders, leaving stubs.

Hedge means a dense row of regularly spaced shrubs planted to form a continuous, unbroken visual screen.

Mulch means nonliving organic, arsenic free material such as wood chips, pine straw or bark placed on the soil to reduce evaporation, prevent soil erosion, control weeds and buffer soil temperature, and synthetic materials customarily used in landscape design to retard erosion and retain moisture.

Native plant community is a natural association of plants dominated by one or more prominent native plant species.

Native plant species shall be the plant species indigenous to the ecological communities of South Florida, as indicated as native to South Florida by the University of Florida in the Atlas of Vascular Plants, or that can be scientifically documented to be native to South Florida.

Pollarding is a pruning system involving the removal of the upper branches of a tree thus promoting a dense head of foliage and branches.

Section 3. The code of Ordinances of the Town of Palm Beach is hereby amended at Chapter 66, Natural Resource Protection; Article IV, Vegetation, to read as follows:

"DIVISION 1. - GENERALLY

Sec. 66-212. - Purpose and intent.

It is the intent of the town to promote the health, safety and welfare of existing and future residents of the town by establishing minimum standards for the protection of natural plant communities, and the installation and continued maintenance of landscaping within the town, in order to:

- (1) Promote health and safety through greater use of cultural and biological controls and reduced use of chemical pesticides for the management of pests, such as whitefly.
- (2) Promote the planting of appropriate native vegetation to encourage the presence of birds and wildlife and to eliminate or significantly reduce the need for fertilizers, pesticides and water
- (3) Promote water conservation and improve air quality by promoting evapotranspiration and through the use of permeable land areas for aquifer recharge and surface water filtration.
- (4) Maintain and improve the aesthetic appearance of the town through appropriate landscape design; thereby protecting and increasing property values throughout the community.
- (5) Improve the environmental quality of the town.
- (6) Eradicate or control certain Category I invasive exotic plant species and eradicate or control Category II invasive exotic plant species as listed on the most current Florida Exotic Pest Plant Council's List of Invasive Plant Species.
- (7) Protect and encourage native shoreline and wetland ecosystems.
- (8) Offer special guidelines for the removal and control of those pestilent exotic species that are particularly deleterious to native shoreline environments.
- (9) Protect listed plant species that inhabit the town as referenced in Sec. 66-312.
- (10) Reduce noise and pollution by designing landscaping to visually screen unsightly views and reduce noise impacts from major roadways and incompatible uses, through the filtering capacity of living trees and vegetation.
- (11) Provide a visual buffer between otherwise incompatible types of land uses.
- (12) Strengthen important vistas and reinforce desirable site design.
- (13) Promote energy conservation by encouraging cooling through the use of vegetation that creates shade.

- (14) Encourage the use of rain harvesting systems, such as cisterns, as a means to conserve water by reducing overwatering of landscapes.
- (15) Promote water conservation and lower water costs through the use of smart irrigation systems and planting native plants appropriate for the location.

Section 4. The code of Ordinances of the Town of Palm Beach is hereby amended at Chapter 66, Natural Resource Protection; Article IV, Vegetation, to read as follows:

DIVISION 4. - DESIGN REQUIREMENTS

Sec. 66-285. – General

- (1). At least 25 percent (25%) of all new required landscaping, in the form of trees, shrubs and ground cover plants, other than grass, shall consist of native vegetation. To determine appropriate native vegetation the Xeriscape Plant Guide by the South Florida Water Management District, or if available County or regional lists as amended may be used.
- (2) The hatracking of trees is prohibited; however pollarding is permitted.

Section 5. The code of Ordinances of the Town of Palm Beach is hereby amended at Chapter 66, Natural Resource Protection; Article IV, Vegetation, to read as follows:

Sec. 66-286. - Water conserving landscape design.

- (5) *Use of organic mulches.* When appropriate, a minimum of two inches of arsenic-free organic mulch shall be installed around each tree planting for a minimum of 18 inches beyond its trunk in all directions, including palms, and throughout all hedge, shrub, and groundcover plantings. Mulch shall be pulled a minimum of two inches away from trees and palms. *Appropriate mulching material consists of by-product or alternative mulches such as eucalyptus, pine needles, pine finds, oak leaf, Atlas grow soil, utility or other mulch as recommended by Florida Friendly Landscaping principles. The use of Cypress mulch, pine mulch, and dyed mulches is prohibited.*

Section 6. Sec. 66-311. Prohibited Plants is hereby amended to include the following provisions:

(d) *Prohibition of ficus benjamina.* Due to extreme susceptibility of the invasive white fly pest and the consequent enforcement issues to require owners to treat or remove infested ficus benjamina, no new planting of ficus benjamina shall be allowed. The planting of appropriate native vegetation in a hedge or hedgerow is encouraged.

(ed) *Protection of natural area and incentives.* The county has recognized the Palm Beach Island Sanctuaries (R43 T43 S34; R43 T44 S03/10/15) located within

the town as a natural area containing high quality ecosystems that are worthy of protection. The town hereby adopts for purposes of the protection of said natural area and for purposes of the regulation of the buffer area around said natural area those sections of the County Code known as the "Palm Beach County Countywide Prohibited Invasive Non-Native Vegetation Removal Ordinance" relating to the protection and regulation of these areas. Additionally, the town adopts the incentive program offered by the county as incorporated within the "Palm Beach County Countywide Prohibited Invasive Non-Native Vegetation Removal Ordinance."

(fe) Enforcement. Violations of this section shall be:

- (1) Failure of a property owner to remove or eradicate prohibited invasive non-native vegetation in accordance with subsection (a) and (c) of this section.
- (2) Failure of a property owner to maintain nonexempt properties free of prohibited invasive non-native vegetation in accordance with subsection (c) of this section.

Section 7. Severability.

If any provision of this Ordinance or the application thereof is held invalid, such invalidity shall not affect the other provisions or applications of this Ordinance which can be given effect without the invalid provisions or applications, and to this end the provisions of this Ordinance are hereby declared severable.

Section 8. Repeal of Ordinances in Conflict.

All other ordinances of the Town of Palm Beach, Florida, or parts thereof which conflict with this or any part of this Ordinance are hereby repealed.

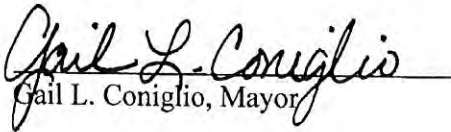
Section 9. Codification.

This Ordinance shall be codified and made a part of the official Code of Ordinances of the Town of Palm Beach.

Section 10. Effective Date.

This Ordinance shall take effect immediately upon its passage and approval, as provided by law.

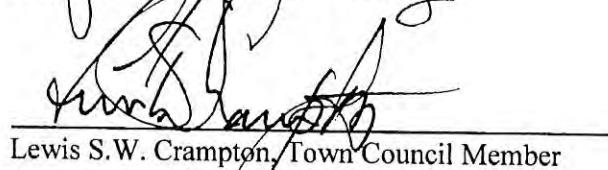
PASSED AND ADOPTED in a regular, adjourned session of the Town Council of the Town of Palm Beach on first reading this 19th day of March, 2019, and for second and final reading on this 9th day of April, 2019.


Gail L. Coniglio, Mayor

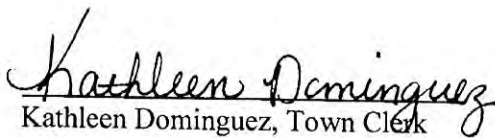

Danielle H. Moore, Town Council President


Margaret A. Zeidman, Council President Pro Tem


Julie Araskog, Town Council Member


Lewis S.W. Crampton, Town Council Member

ATTEST:


Kathleen Dominguez, Town Clerk


Bobbie Lindsay, Town Council Member



ARTICLE XII. - LANDSCAPING, TREE PROTECTION, LAND CLEARING AND LAND ALTERATION

Footnotes:

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State Law reference— Conservation programs authorized, F.S. § 125.01(1)(k).

DIVISION 1. - GENERALLY

Secs. 62-4301—62-4330. - Reserved.

DIVISION 2. - LAND CLEARING, LANDSCAPING AND TREE PROTECTION

Footnotes:

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Editor's note— Ord. No. 09-24, §§ 7-14, adopted Sept. 15, 2009, included provisions that renumbered §§ 62-4340-62-4346 as 62-4341-62-4347 as herein set out. See the Code Comparative Table for complete derivation. Ord. No. 06-55, §§ 1—17, adopted October 24, 2006, repealed and reenacted division 2, §§ 62-4331—62-4337, to read as herein set out. Formerly, division 2 pertained to landscaping and derived from the Code of 1979, §§ 14-110, 14-110.1—14-110.5; Ord. No. 99-55, §§ 1, 2, adopted October 12, 1999; Ord. No. 02-26, §§ 1—4, adopted May 21, 2002; Ord. No. 02-35, § 1—9, adopted July 23, 2002.

Sec. 62-4331. - Purpose and intent.

The board of county commissioners finds that the health, safety and welfare of its citizens can best be protected by land use regulations that support and enforce the following community goals:

- (1) Promote the establishment, management and conservation of native vegetative communities.
- (2) Promote visual and aesthetic buffers between land uses.
- (3) Encourage the protection of Heritage or Specimen Trees.
- (4) Promote water conservation and aquifer recharge.
- (5) Encourage creative landscape designs.
- (6) Protect life and property by appropriately planting trees and vegetation.
- (7) Preserve and enhance property values.
- (8) Control soil erosion and mitigate heat, air and water pollution.
- (9) Provide regulations that are user-friendly, flexible and minimize conflicts with other land development regulations while protecting property rights.

(Ord. No. 06-55, § 3, 10-24-06)

Sec. 62-4332. - Definitions.

Active development order means an action by the county approving a site development plan, final development plan or subdivision plat, or the issuance of a permit pursuant to Chapter 22, Brevard County Code.

Adverse site conditions means existing site conditions that adversely affect the implementation of the provisions of this Division and that hinder plant viability and growth. Examples include, but are not limited to:

- (1) Existing topographic elevation changes that would result in the likelihood that preserved or planted materials would not survive.
- (2) Existing areas of buried solid waste at a depth that would affect viability of preserved or planted materials.
- (3) Existing electrical lines or utility easements that prevent or restrict the preservation or planting of landscape

materials.

- (4) Barrier island planting conditions that cannot support certain hardwood species.
- (5) Existing, expansive water bodies or preserved natural areas where their location might prohibit the installation of required landscaping or buffers or that conflict with preservation.
- (6) Redevelopment sites where existing landscaping does not meet current standards and where existing site conditions, such as but not limited to, impervious surfaces, access locations, or building locations, prevent the site from meeting the current landscaping requirements.
- (7) Sites where type or distribution of existing canopy or other protected trees are such that preservation requirements would prohibit site development or conflict with required development standards, such as stormwater or roadway designs.

Adverse site conditions do not include plan designs that do not avoid preservation areas or trees to the greatest extent feasible.

After-the-fact permit means a permit issued after a violation has occurred for the primary purpose of correcting the violation (if the activity would have been permissible) or for bringing the violator into compliance with existing regulations.

Agricultural activity means any use or action commonly associated with the raising of crops, livestock, silviculture, forestry, groves, pasture, nurseries, or combinations of such activities.

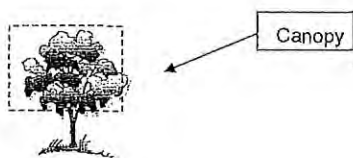
Alternate landscape enhancement plan means a plan that provides property owners with adverse conditions the flexibility to design a landscape plan to manage the specific, adverse site conditions.

Area of alteration means the area of the site, parcel or lot where alteration and/or disturbance will occur. If any excluded, nonaltered areas will be credited towards the required landscaping and/or canopy, then the area(s) is considered area of alteration for the purposes of landscaping and canopy requirements calculation.

Bona fide agricultural use means the commercial agricultural use of a site, parcel, or lot that has been classified as agricultural land pursuant to F.S. § 193.461.

Caliper means the diameter of the trunk of a tree, or the sum of the stems of a multistemmed tree, measured six inches above natural grade, development grade or root ball.

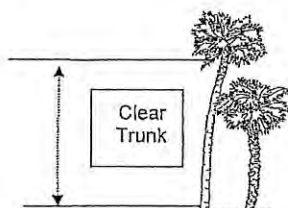
Canopy means the area consisting of a tree's branches in all directions from its trunk, the outer edge of which is the dripline.



Canopy coverage means the aerial extent of ground within the drip line of the tree.

Canopy species means a native hardwood or softwood tree, not including palms, that provides sufficient canopy to mitigate the Heat Island Effect.

Clear trunk means a measurement from the soil line to the point in the canopy where the trunk caliper begins to taper abruptly. On many palms, this point will lie at the base of the petiole of the third or fourth youngest but fully expanded leaf.



Diameter at breast height (dbh) means the diameter of the trunk of a tree, or the sum of the stems of a multistemmed tree, measured four and one-half feet above natural or development grade.

Director means the director of the Brevard County Natural Resources Management Office or designee.

Dripline means an imaginary vertical plumb line that extends downward from the tips of the outermost tree branches and intersects the ground.



Florida Friendly Landscaping means the utilization of nine principles in landscape design. These nine principles are:

- (1) Right plant, right place;
- (2) Drought tolerant plantings;
- (3) Fertilize appropriately;
- (4) Mulch;
- (5) Attract wildlife;
- (6) Control yard pests responsibly;
- (7) Recycle;
- (8) Reduce stormwater runoff; and
- (9) Protect the waterfront.

Fruit and nut crop means apples, atemoya, annon, avocado, banana, blackberries, blueberries, chestnut, citrus, figs, grapes/muscadine, jackfruit, mango, mayhaw, nectarines, papaya, passion fruit, peaches, pears, pecans, persimmon, plums, quince, raspberry, star apple, sugar apple, tamarind and any other species as deemed appropriate for Brevard County based on chilling requirements, cold hardiness, warm weather adaptability, and variety adaptation.

Greatest extent feasible shall include, but not be limited to, relocation of roads, buildings, ponds, increasing building height to reduce building footprints or reducing vehicular use areas.

Hand-clearing means the use of hand-held tools or hand-held machinery including chainsaws, string trimmers, pruning shears, machetes, or scythes. Hand clearing does not include the use of tractors, push or riding mowers, or other similar machinery.

Heat Island Effect means the increase in temperature in urban areas compared to the surrounding rural lands usually because of reduced vegetative cover or excessive use of impervious surfaces.

Hydrozone means the grouping of plant species with similar watering needs in landscaped areas having appropriate microclimate, soil, and water conditions so that all plants in that area thrive.

Improper pruning means the following:

- (1) Pruning that reduces the height or spread of a tree that has not attained maturity, by altering the dominant stem(s) within the tree crown to such a degree as to remove the natural canopy of the tree; or
- (2) Pruning that leaves stubs or results in a flush cut (a cut too close to the main branch or trunk that does not allow for proper healing); or splitting of limb ends; or
- (3) Peeling or stripping of bark; or the removal of bark to the extent that, if a line is drawn at any height around the circumference of the tree, over one-third of the length of the line falls on portions of the tree where bark no longer remains; or

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- (4) Using climbing spikes and hooks, except for purposes of total tree removal or as specifically permitted by the Florida L Council or American National Standards Institute (ANSI A-300); or
 - (5) Destroying the natural habit of growth which causes irreparable damage and permanent disfigurement to a tree such that, even with regrowth, the tree will never regain the original characteristics of its tree species, or is a danger to the public or property; or
 - (6) Pruning that results in flat-cutting the top or sides of a tree, to sever the leader or leaders or to prune a tree by stubbing off mature wood, except where removal of a branch is necessary to protect public safety.
 - (7) Exception: The removal of diseased or dead portions of a tree or the removal of an interfering, obstructing or weak branch shall not constitute improper tree pruning under this section. Interference with or obstruction of streetlights, stop signs or traffic signals is an example of pruning which, if accomplished by the International Society of Arboriculture's pruning standards, American National Standards Institute (ANSI A-300), the Florida Urban Forestry Council, or the University of Florida Cooperative Extension Service's circular Publication No. 853 entitled Pruning Landscape Trees and Shrubs, is not a violation of this division.
 - (8) All nonnative noxious plants as defined in this section are exempt from improper tree pruning standards.

ISA means the International Society of Arboriculture.

Land clearing means the removal or cutting down of vegetation, including trees, root-raking on any site, parcel or lot. This does not include allowable mowing, trimming or pruning so as to maintain vegetation in a healthy, viable condition.

Landscaped earth berm means an earthen mound which is not greater than four feet in height and which is sodded and planted with additional vegetation to meet the specifications of the required vegetative buffer classification.

Landscape plan means a plan drawn to an appropriate engineering scale depicting existing and proposed vegetation and prepared by a recognized knowledgeable person.

Landscaping means the preservation or planting of vegetation to enhance the natural or built environment pursuant to the provisions of this division.

Mangrove means any specimen of the species *Avicennia germinans* (Black Mangrove), *Laguncularia racemosa* (White Mangrove) or *Rhizophora mangle* (Red Mangrove).

Mowing means to cut down grass or other herbaceous growth that could be removed using light machinery and does not increase soil compaction or result in significant soil movement. In no event shall mowing increase soil compaction or cause reduction in viability of vegetation.

Native vegetation means those plant species indigenous to Florida as determined by the best available scientific and historical documentation and suitable for planting in Brevard County. The Atlas of Florida Vascular Plants maintained by the Institute for Systemic Botany, University of South Florida shall be used as a reference.

NRMO means the Brevard County Natural Resources Management Office or its successor agency.

Nonnative invasive plant, for the purposes of this ordinance, means the "prohibited" species listed in the IFAS (Institute of Food and Agricultural Science—University of FL) Plant List as may be amended.

Pervious area means an area that permits water and air to permeate or penetrate to the roots of existing or planted vegetation. Pervious Areas do not include materials such as compacted marl or clay, pavement, or concrete. Turf block, pavers, or other similar materials and installation techniques that considerably inhibit permeation and penetration of water and air or necessitate root removal or grade change are not considered pervious.

Protected tree means, with the exception of nonnative invasive or undesirable plants, a hardwood tree having dbh of ten inches or greater located on the mainland or Merit Island or having a dbh of 1.5 inches on the barrier island; or a softwood tree, such as a pine, having a dbh of 14 inches or greater or 1.5 inches on the barrier island.

Recognized knowledgeable person means an individual knowledgeable in the identification and evaluation of vegetative resources, such as a forester, biologist, ecologist, horticulturist, Florida registered landscape architect, licensed landscape contractor, certified International Society of Arboriculture arborist, certified nurseryman, Florida Nursery, Growers and Landscape Association Certified Landscape Designer or a person having acceptable experience. Acceptable experience shall include a minimum of a four-year degree in horticulture, ecology, forestry, botany, landscape architecture or a minimum of four years of fulltime experience in the identification and evaluation of vegetative resources.

Redevelopment means renovation of a previously developed, obsolete commercial or industrial parcel of land where reasonably viable use of the buildings or improvements is impaired by reason of deterioration, age, or obsolescence such that the conditions are leading to economic distress or endangering life or property. The term obsolescence includes, but is not limited to, inadequate infrastructure, access or transportation facilities; inadequate provisions for ventilation, light, air, sanitation, drainage or open space; outdated development patterns; and depressed property values.

Re-growth control means removal or trimming of individual plants before the plants reach the onset of flowering.

Restoration plan means a plan submitted to NRMO for review that addresses revegetation, replacement, and/or reestablishment of an area that has been illegally cleared.

Roll back provisions (as specified in [section 62-4335](#)) apply only to land clearing activities on lands that are not classified as agricultural land as of October 24, 2006, or that are engaged in agricultural pursuits not classified as bona fide as defined in F.S. § 193.461. For these properties, no new development order or rezoning request may be submitted which would enjoy the current cleared state for a minimum of three years from the commencement of agricultural activity. Specifically, if a new development order or rezoning request is submitted within three years of the commencement of agricultural activity, the submittal shall reflect the pre-cleared conditions of the site and apply the current ordinance to the pre-cleared conditions.

Root protection zone means the pervious area beneath a tree centered on the trunk. For preserved trees, this means the area beneath the drip line of the tree. Root protection zones that include existing impervious area(s) not adversely affecting the viability of the tree, may be acceptable. Pursuant to [section 62-4346](#), the director may consider a waiver to the required root protection zone that does not adversely impact the viability of the tree.

Soil amendment means a replacement or improvement to the soil providing for optimum root and plant growth of vegetative materials.

Specimen tree means a tree considered an important community asset due to its unique or noteworthy characteristics or values. A tree may be considered a specimen tree based on its size, age, rarity or special historical or ecological significance. Specimen trees include large hardwoods (oaks, maples, etc.) or softwoods (pines, cypress, cedars, etc.) in good condition as determined by a recognized knowledgeable person, with a dbh of 24 inches or greater and smaller understory trees (stoppers, hollies, etc.) in good condition with a dbh of ten inches or greater.

Spread means the crown diameter measured by taking the average of the widest branch spread and the branch spread perpendicular to it.



Fig. 1 Add A and B together and divide by 2 to get the Spread.

Tree is a perennial, woody plant that is generally characterized by having a self-supporting trunk with secondary branches. Trees shall be classified as follows:

- (1) Large trees: Average maximum height exceeding 40 feet.
- (2) Medium trees: Average maximum height of 25 feet but less than 40 feet.
- (3) Small trees: Average maximum height of ten feet but less than 25 feet.

Understory means an underlying layer of low native vegetation usually associated with trees.

Undesirable plant means the "Invasive: Not Recommended" or "Caution" species listed in the IFAS (Institute of Food and Agricultural Science-University of Florida) Plant List as may be amended. Plants shall be considered undesirable if not eligible for any use, limited use, or cautioned in any zone—North, central or south.

Vegetative buffer area means an area of undisturbed native vegetation or vegetation established consistent with the surrounding vegetation and soil types. This area shall be located along the perimeter of properties where required by the county.

Vegetation means any plant material, including but not limited to trees, shrubs, vines, herbs and grasses. Vegetation shall be classified as follows:

- (1) Large trees: Average maximum height exceeding 40 feet.
- (2) Medium trees: Average maximum height of 25 feet but less than 40 feet.
- (3) Small trees: Average maximum height of ten feet but less than 25 feet.
- (4) Shrubs, ground cover and vines: Average maximum height of less than ten feet, which completely covers the ground at maturity.
- (5) Palm trees: All heights.

Vegetative communities means a natural association of vegetative plants, including but not limited to both trees and understory.

Vehicular use area means any area used for the purpose of driving, maneuvering, parking, storing, loading or unloading or displaying of motor vehicles and boats, excluding rivers, lagoons, streams, public rights-of-way, and permitted driveways and parking areas for single-family residences. Motor vehicles shall include, but are not limited to, automobiles, trucks, vans, campers and motorcycles.

Viable means plant material exhibiting a healthy and vigorous condition having live foliage out to the tips of all branches and stems. Palms shall have no dead spots or yellowing.

Xeriscapingtm or *water-wise landscaping* means the utilization of seven principles to conserve water in the landscape. These seven principles are:

- (1) Plan and design;
- (2) Soil analysis and amendment;
- (3) Appropriate plant selection;
- (4) Reduction of turf areas;
- (5) Efficient irrigation;
- (6) Mulching; and
- (7) Proper maintenance.

(Ord. No. 06-55, § 4, 10-24-06; Ord. No. 08-01, § 2, 1-8-08; Ord. No. 09-24, § 1, 9-15-09; Ord. No. 2012-28, § 1, 9-4-12)

Sec. 62-4333. - Applicability.

The provisions of this division shall apply to the unincorporated areas of the county. The requirements to remove nonnative invasive plants at the time of development and control re-growth of such plants in the required area within the site shall apply countywide and prospectively to property on and after May 21, 2002.

(Ord. No. 06-55, § 5, 10-24-06; Ord. No. 08-01, § 3, 1-8-08)

Sec. 62-4334. - Exemptions.

The following land uses and activities shall be exempt from the requirements of this division:

- (1) Pursuant to the Florida Agricultural Lands and Practices Act (F.S. Ch. 163.3162(4)), any activity of a bona fide agriculturist classified as agricultural land pursuant to F.S. § 193.461.
- (2) Single-family lots that are 1.25 acres or less, and have a certificate of occupancy, are exempt from the canopy and preservation requirements of this division as long as minimum landscaping requirements as may be required by this division are met and maintained.
- (3) Single-family lots that are more than 1.25 acres but less than or equal to 2.5 acres, and have a certificate of occupancy, are exempt from the canopy and preservation requirements of this division as long as specimen tree and minimum landscaping requirements as may be required by this division are met and maintained.
- (4) The removal of any plant that is a nonnative invasive or undesirable plant as specified in section 62-4332 of this division except within shoreline protection buffers as defined by article X, the Brevard County Coastal Construction Setback Line as defined by article XII, and wetlands as defined by article X. Within these areas, nonnative invasive or undesirable plant removal is exempt if:
 - a. Removal does not eliminate, destroy or damage existing native vegetation, wetland habitats, floodplains, required erosion control or stormwater management systems, or endangered or threatened species or their habitats.
 - b. Removal does not undermine shoreline integrity or promote increased shoreline or upland erosion.
 - c. Removal does not increase sediment or nutrient loading to the adjacent water bodies.
 - d. Removal is achieved by hand-clearing.
 - e. Roots shall not be removed below ground. Above ground foliage may be cut and stumps treated appropriately.
 - f. Herbicides are used to treat the invasive species as approved for aquatic use.Other methods may be considered pursuant to a Small Scale Land Clearing permit as outlined in Section 62-4338.
- (5) Public or private linear projects and utility corridors developed or maintained by governmental or investor owned regulated utilities that do not require an active development order are exempt if determined to be in the public interest as defined in the Brevard County Comprehensive Plan Glossary. Linear projects include federal, state and county roadways, such as arterial and collector roads, sidelways, trails and paths.
- (6) Emergency removal of a dead or seriously damaged tree that poses immediate threat to the health, safety and welfare of the property owners or the general public. Prior to emergency removal, immediate threat should be documented to include but not be limited to (1) photographs of the tree(s) including any areas that may be damaged, diseased, or infested (2) approximate measurements including tree height, spread, dbh, and (3) distance to structure(s) or other immovable target(s) if felled.
- (7) When the proposed land clearing activity is regulated by another state or federal agency and such regulations may pre-empt local regulations.
- (8) The removal of vegetation that has been ordered by the County, pursuant to the provisions of chapter 114, article II. Prior to issuing the order for removal of vegetation pursuant to the provisions of chapter 114, article II, code enforcement shall consult NRMCO. If the removal conflicts with the requirements or intent of this division, the county manager or designee shall negotiate a resolution of the conflict.
- (9) The removal of fruit and nut crops unless used to satisfy the landscaping performance standards of this division.
- (10) The removal of vegetation for the purposes of survey or soil testing by such companies licensed to conduct such activities is exempt if:
 - a. Removal is limited to the minimum amount required by the activity and shall average no greater than ten feet in width.
 - b. Protected and specimen trees are not removed.
 - c. Removal does not eliminate, destroy or damage wetland habitats, floodplains, required erosion control or stormwater management systems, or endangered or threatened species or their habitats.

- d. Removal does not undermine shoreline integrity or promote increased shoreline or upland erosion.
- e. Removal does not increase sediment or nutrient loading to the adjacent water bodies.
- f. Roots shall not be removed below ground.

Other methods may be considered pursuant to a small scale land clearing permit as outlined in section 62-4338.

- (11) All lands that have an existing, active land clearing permit or approved, active site plan or building permit shall be exempt from requirements of this division that are inconsistent with the previous ordinance.

(Ord. No. 06-55, § 6, 10-24-06; Ord. No. 07-17, § 1, 4-24-07; Ord. No. 08-01, § 4, 1-8-08; Ord. No. 09-24, § 2, 9-15-09)

Sec. 62-4335. - Non-bona fide agricultural land clearing activities.

- (a) To the extent provided by law, any activity of a bona fide agricultural use on land classified as agricultural land pursuant to F.S. § 193.461 is exempt from the requirements of this division (see section 62-4334). However, land clearing activities on lands not classified as agricultural land pursuant to F.S. § 193.461 shall meet the following requirements:
- (1) NRMO shall be provided with a completed non-bona fide agricultural land clearing application.
 - (2) NRMO shall be provided one copy of a completed and signed conservation plan from USDA.
 - (3) The proposed agricultural activity shall be a use or activity permitted by the existing zoning of the property.
 - (4) Abutting properties shall be notified by the applicant of the proposed land clearing activity. Written verification of the notification shall be required by NRMO.
 - (5) Properties where the proposed agricultural activity is not a bona fide agricultural use, shall be subject to the three-year roll-back.
- (b) Proposed bona fide agricultural use land clearing activities on lands that are proposed, but not yet classified as agricultural land pursuant to F.S. § 193.461 shall be subject to the three-year roll-back requirements in this division as defined in section 62-4332.

(Ord. No. 06-55, § 7, 10-24-06; Ord. No. 08-01, § 5, 1-8-08)

Sec. 62-4336. - Penalties and remedies.

- (1) *General penalties.* Unless permitted through an after-the-fact permit, violations of this division shall be punished pursuant to section 62-5 and section 1-7, Brevard County Code, as amended. Violations of this division are considered irreparable and irreversible in nature.
- (2) *Special provisions.*
- a. Each quarter acre, or fraction thereof, of land clearing in violation of this division shall constitute a separate violation.
 - b. Additionally, if protected trees are cut down on or removed from the site, each tree shall constitute a separate violation.
 - c. The board of county commissioners may establish a schedule of fines to be assessed pursuant to section 2-176 by resolution.
 - d. The board of county commissioners may establish by resolution both mitigating and aggravating factors to be considered in assessment of a fine imposed pursuant to section 2-176, Brevard County Code.
- (3) *Additional remedies.* In addition to any fines imposed one or more of the following remedies shall apply:
- a. Properties that are in violation of this division shall not have permits approved nor certificate of occupancy or completion issued pursuant to this division until the violation has been resolved to the satisfaction of the county.
 - b. For projects with valid active development order or other land clearing authorization granted under this division, the director may issue a stop-work order immediately on verification of the violation by the county. Work being done contrary to the provisions of this code or in a dangerous or unsafe manner, shall immediately cease. Such

notice shall be in writing and shall be given to the owner of the property, or to the owner's agent, or to the person doing the work, and shall state the conditions under which work may be resumed. Where an emergency exists, the director shall not be required to give a written notice prior to stopping the work. A property owner may appeal a stop work order by requesting a special magistrate hearing in writing and filed within 30 calendar days after the decision is rendered by the director. Appeals shall be in a form acceptable to the director.

- c. Restoration, replacement, and/or mitigation shall be required for all violations. The director shall be responsible for reviewing and approving all restoration plans. All restoration plans shall be prepared by a recognized knowledgeable person and shall meet the requirements of an alternative landscape enhancement plan as outlined in subsections 62-4345(2) and (3). Restoration plans shall be submitted with fee as approved by board resolution. Landscape maintenance and/or performance bonds may be required with restoration plans pursuant to sections 62-4341(17) and 62-4343.
- d. All fines shall be deposited in an arbor trust fund. Fines collected shall be dedicated to fulfill the purposes of this section.
- e. Funds collected from fines prior to the enactment of this ordinance that have not been committed shall be allocated to the arbor trust fund.

(Ord. No. 06-55, § 8, 10-24-06; Ord. No. 08-01, § 6, 1-8-08; Ord. No. 09-24, § 3, 9-15-09)

Sec. 62-4337. - Permit application requirements and review process.

Unless specifically exempted by section 62-4334, a permit shall be required prior to any land clearing activities. NRMO shall provide application forms for those properties not part of an application for an active development order, such as survey, soil, and engineering testing and small scale land clearing permits. If a property is the subject of a building permit, subdivision or site plan permit, the information required in this section shall be provided in the appropriate application. Prior to submittal of the plans required in this section, the applicant is strongly encouraged to meet with the county to discuss the requirements of this division. Except for single-family lots, all landscape and land clearing plans shall be prepared by a recognized knowledgeable person. All plans submitted for landscaping and land clearing permits that are part of a subdivision or site plan application, shall be approved in writing by a professional civil engineer, professional architect or landscape architect, registered in the State of Florida and proficient in site design.

(1) *Application requirements:*

- a. Name, address and phone number. If the applicant is not the property owner of record, written authorization from the property owner is required.
- b. Legal description of the property.
- c. Location map showing the property's relationship to nearby roads and landmarks.
- d. Boundary survey drawn to scale not to exceed one inch to 100 feet, depicting all existing and proposed structures, lot dimensions, and location and amount of clearing proposed.
- e. Survey of all existing protected trees and canopy coverage, and identified to species and dbh. For properties greater than five acres, an alternative methodology of locating individual trees may be used if the methodology is approved by NRMO. The tree survey shall be prepared by a professional land surveyor registered in the State of Florida.
- f. Depiction of existing and proposed tree canopy boundaries.
- g. The zoning classification and land uses for the property and abutting properties.
- h. Wetlands and their boundaries that have been delineated pursuant to Chapter 62-340, Florida Administrative Code, as amended.
- i. Proposed use of the property.
- j. Aerial photograph depicting location of proposed activities on the property.
- k. If the application is for approval of a landscape plan as part of a building permit, subdivision or site plan application, the following additional information is required on the plans:

- i. All parking areas.
 - ii. All other vehicular use areas, access aisles and drives.
 - iii. Natural and manmade water bodies.
 - iv. On-site sewage disposal systems or central sewer lines.
 - v. Location of proposed source of irrigation supply.
 - vi. Size, number and species of all required landscape materials.
 - vii. Description and location of all existing trees and native vegetation and vegetative communities to be preserved.
 - viii. All existing and proposed utility and drainage easements, poles or structures.
 - ix. All applicable setback and buffers as may be required by article X and XII of this chapter.
 - x. Limits of fill, excavation, and clearing with applicable square footages.
 - l. Any other information that is necessary to determine compliance with the County's land development regulations.
- (2) Review process for applications other than building permits:
- a. Upon receipt of the application and fee, NRMO shall review the application within 15 calendar days to determine that all required information has been submitted and is sufficient for review purposes. This review period may be extended by NRMO due to unusual circumstances, including but not limited to, natural disasters resulting in an increased workload. The applicant shall be notified of the deficient items. Upon submittal of the deficient or missing information by the applicant, NRMO shall review the application to determine that the requested information has been provided. If the requested information has not been provided or is insufficient, the applicant shall be notified that no further review will be performed by NRMO until the requested information is provided or sufficient.
 - b. Once the application has been deemed complete or the applicant has notified NRMO in writing that no further information will be provided, NRMO shall review the application within 15 calendar days to determine its compliance with the performance standards contained in this division and shall either approve or deny the permit application. This review period may be extended by NRMO due to unusual circumstances, including but not limited to, natural disasters resulting in an increased work load.
- (3) Building permit applications shall be processed and reviewed through the building code office procedures.
- (Ord. No. 06-55, § 9, 10-24-06; Ord. No. 08-01, § 7, 1-8-08; Ord. No. 09-24, § 4, 9-15-09)

Sec. 62-4338. - Land clearing performance standards.

Unless specifically exempted by section 62-4334, all land clearing activities shall meet the performance standards for the applicable activity listed in this section. Land clearing activities for lands with existing certificates of occupancy or completion shall meet the minimum standards in sections 62-4338 and 62-4339 in perpetuity except as allowed by this division and as approved by NRMO. Any land clearing activities shall be in compliance with chapter 62, articles II, X, XII, and XIII of the county code. All land clearing activities shall comply with the following performance standards:

- (1) A land clearing permit shall expire 90 days from the date of issuance for single-family lots and shall expire concurrently with the construction permit for subdivisions and multifamily, commercial, institutional, public and industrial projects. A reasonable extension not to exceed 60 days may be authorized by the Director for single-family residential provided appropriate justification warrants, such as unusual weather, seasonal situations or inability to obtain permits from other agencies.
- (2) The applicant shall post the land clearing permit on the affected property in such a manner as to be visible from an abutting road. The land clearing permit shall remain posted on the affected property during all applicable land clearing activity. It is the responsibility of the applicant to maintain the land clearing permit in a clearly visible manner at all times.

- (3) The trimming, pruning, maintenance or removal of Mangroves shall be consistent with applicable federal and/or state applicable. Permits from appropriate agencies shall be provided for verification prior to the issuance of a land clearing county.
- (4) Vegetative buffers or other ground covers that retard erosion must be established or installed within seven days after final grade of a subdivision, commercial, industrial or multifamily project has been obtained or within 14 days after the last construction activity has occurred. Erosion and sedimentation control measures shall be in compliance with the best management practices as outlined in the Florida Stormwater, Erosion, and Sedimentation Control Inspectors Manual. 2005. Florida Department of Environmental Protection and Florida Department of Transportation, as may be amended and as required by Chapter 62-25, Florida Administrative Code, as may be amended.
- (5) Small scale land clearing permit. Small scale land clearing permits shall be considered an administrative waiver for land clearing.
 - a. The owner of the property proposed to be cleared, or the authorized agent, shall submit an application for the proposed land clearing activity to the county, on such form as provided by the county. The small scale land clearing permit shall expire 30 days from the date of issuance. A reasonable extension not to exceed 60 days may be authorized by the director provided appropriate justification warrants, such as unusual weather, seasonal situations or inability to obtain permits from other agencies.
 - b. The applicant shall post the small scale land clearing permit on the affected property in such a manner as to be visible from an abutting road. The small scale land clearing permit shall remain posted on the affected property during all applicable land clearing activity. It is the responsibility of the applicant to maintain the small scale land clearing permit in a clearly visible manner at all times.
 - c. Only one small scale land clearing permit shall be approved per calendar year for any property, regardless of ownership.
 - d. Up to 50 percent of the understory of the area of the site or one acre, whichever is less, can be approved for removal.
 - e. Up to ten percent native canopy of the area of the site can be approved for removal.
 - f. Specimen trees can not be approved for removal.
 - g. Land clearing approval shall be based on the results of a site visit by NRMO and documentation as submitted by the applicant. NRMO shall consider whether the property meets basic landscape, specimen, and tree preservation requirements, reason(s) for removal and certified ISA arborist reports, if available. Verifiable safety and welfare issues, removal other than hand-clearing in environmentally sensitive areas, and habitat/fire management will be considered under small scale land clearing permit. If tree(s) are approved for removal, NRMO shall assign appropriate replacement for removed tree(s) per subsection 62-4341(19).
- (6) If the project is not completed prior to the expiration date of the active development order or other land clearing authorization granted under this division, the cleared areas shall be vegetated to the minimum canopy preservation, tree preservation and landscaping standards.
- (7) Land clearing shall include any intentional or negligent act or lack of protective measures that affects viability, including, but not limited to:
 - a. Improper pruning.
 - b. Damage inflicted upon the root system by the application of toxic substances, including herbicides, solvents, oil, gasoline, and diesel fuel.
 - c. Damage caused by the operation of machinery, including but not limited to, soil compaction and trunk or root injury.
 - d. Damage caused by the storage of materials.
 - e. Damages from injury which results or is likely to result in pest infestation.
 - f. Change in natural grade to the root system through excavation or filling.

(Ord. No. 06-55, § 10, 10-24-06; Ord. No. 08-01, § 8, 1-8-08; Ord. No. 09-24, § 5, 9-15-09)

Sec. 62-4339. - Canopy and tree preservation performance standards.

All development shall meet the performance standards listed in this section. Single-family lots two and one-half acres or less are exempt from subsections 62-4339(2)(c) through (i) below. Single-family lots greater than one and one-fourth acres, shall comply with specimen tree requirements.

Additional incentives for increased canopy preservation and landscaping are located in section 62-4344, entitled incentives for increased canopy and tree preservation and increased landscaping.

- (1) For platted subdivisions, canopy and tree preservation requirements will be based on the entire area of alteration of the subdivision, including lots and demonstrated at the time of plat review. However, canopy shall not be preserved on individual lots unless part of a contiguous, continuous area of canopy with sufficient protective language, noted on the approved landscape plan, to prohibit activities that are detrimental to the perpetual preservation of the area. The general landscaping requirements shall be demonstrated for common areas of the subdivision (including but not limited to common use, recreational structures, open spaces tracts, and buffers) at the time of plat review. Individual properties within the subdivision shall be reviewed for compliance with general landscaping requirements during the building permit process, if not addressed prior to certification of completion. If all tree preservation requirements and general landscaping requirements are met at the time of development based on area of alteration including individual lots, those lots will be exempt from review for compliance with general landscaping requirements during the building permit process. All required landscaping shall be maintained in accordance with section 62-4343.
- (2) The amount of canopy coverage preservation on each property shall be determined using the following standards based on the property's area of alteration, commercial, institutional, and industrial parcels three acres or less shall not be required to meet minimum canopy preservation criteria below:

Land Use	Minimum Canopy Preservation of the Area of Alteration	Canopy Achieved by Planted Trees of the Area of Alteration	Total Canopy Percentage of the Area of Alteration
Single-family and multifamily residential, commercial, institutional, public	10%	10%	20%
Industrial	10%	5%	15%

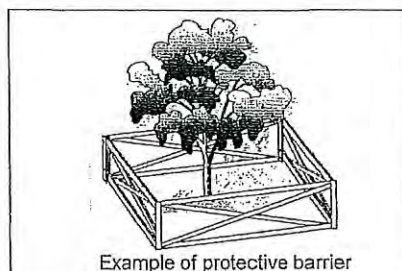
- a. No more than 50 percent of planted trees shall be of any one genus (i.e. Quercus, Pinus, Acer, etc.) to encourage biodiversity and decrease impacts from disease.
- b. A 25 percent reduction in the minimum canopy preservation and canopy achieved by planted trees of the area of alteration shall be given for canopy, and understory if present, preserved in a contiguous, continuous tract on-site, as opposed to individual trees. Canopy, and understory if present, shall meet 100 percent of the required total canopy percentage of the area of alteration to be permitted the 25 percent reduction. For sites between ten and 25 acres in size, two contiguous, continuous tracts will be allowed. For sites between 25 and 100 acres in size, three contiguous, continuous tracts will be allowed. For every 100 acres, or fraction thereof, thereafter, one additional contiguous, continuous tract will be allowed. No credit shall be given to preservation

areas less than 15 feet in width, nor shall they be considered to make separate preservation tracts contiguous or continuous. This option shall not be available for properties with scattered canopy. For the purposes of canopy preservation, existing undisturbed vegetated understory in excess of an average of 24 inches in height associated with existing trees shall be considered as preserved canopy area.

For properties where contiguous, continuous preservation is appropriate, the following chart shall apply:

Land Use	Total Canopy Percentage of the Area of Alteration
Single-family and multifamily residential, commercial, institutional, public	16%
Industrial	12%

- c. Preserved trees shall have protective barriers during construction which encompass the root protection zone. The protective barrier must be adequate to make a minimum 30-inch tall, visual, durable barrier. Acceptable barrier materials include but are not limited to silt fence (nontrenched), orange mesh fencing, wood barrier, lath and tape/rope, staked hay bales or other barrier as provided by the design consultant on the development plan and approved by NRMO. Protective barriers shall be placed no more than two and one-half feet inside established root protection zone prior to any land clearing, alteration, or commencement of construction including grading and filling. For all development, except single-family lots not platted as part of a subdivision, it shall be the responsibility of the applicant/owner to schedule an inspection with NRMO or provide a notarized statement from a recognized knowledgeable person, professional land surveyor registered in the State of Florida, professional civil engineer, or professional architect, registered in the State of Florida and proficient in site design that protective barriers have been correctly installed. Failure to schedule an inspection or provide the notarized statement prior to any land clearing, alteration, or commencement of construction including grading and filling, shall constitute a violation of this division and may be subject to stop work order and other penalties and remedies pursuant to section 62-4336. The only allowable activities prior to filing the notarized statement with NRMO shall be those activities necessary for compliance with Stormwater Pollution Prevention Plans (SWPPP) and Florida Department of Environmental Protection (FDEP) National Pollutant Discharge Elimination System (NPDES).



- d. Credits for canopy preservation greater than the minimum required shall be given in accordance with the provisions in Section 62-4344.
- e. Canopy preservation areas in new subdivisions, industrial, institutional, public, or commercial developments shall be within separate tracts, declaration of covenants, recorded plat condition, or with sufficient protective language, noted on the approved landscape plan, to prohibit activities that are detrimental to the perpetual preservation of the area.
- f. Activities permitted within canopy preservation areas include landscaping, passive recreation areas, fences,

boardwalks, trails, decks and paths as long as these areas are pervious and not within the root protection zone of any tree, except as permitted herein, and do not necessitate the removal of vegetation, except as approved by NRMCO. Decks, boardwalks, and trails may not exceed 25 percent of the total root protection zone. Habitat management practices, such as prescribed fire, may occur within the root protection zone. In no event shall a root protection zone be less than 100 square feet for planted or preserved trees and 25 square feet for planted or preserved palms.

- g. Credit for canopy preservation shall not be given for areas excluded from the area of alteration.
 - h. Canopy coverage achieved through the use of planted trees shall be credited at 25 percent of the projected canopy at maturity of the species as specified in appendix C. If the actual canopy of the planted tree is larger than 25 percent of the mature canopy size, actual canopy coverage of the particular tree shall be credited.
 - i. Existing trees that are successfully relocated elsewhere on the property can be credited towards the canopy coverage requirements but shall not be credited towards preservation requirements.
 - j. If existing canopy is less than the listed minimum canopy preservation requirement, the existing canopy percentage shall be used in lieu of the minimum canopy preservation requirement. Total canopy percentage shall be recalculated using the new minimum preserved canopy plus the required planted canopy.
 - k. Vegetation defined as non-native invasive or undesirable plants pursuant to section 62-4332 shall not be credited towards fulfillment of preservation or planting requirements.
 - l. Plantings in areas that may be potentially cleared in the future or where planting will impede maintenance operations cannot be credited towards landscaping and preservation and is prohibited.
 - m. For external expansion projects, existing trees that are determined to be viable by an ISA certified arborist may be credited toward canopy preservation if no additional impervious impact is proposed within the root protection zone of the tree.
- (3) All development subject to this division shall preserve protected trees unless specifically exempted herein.
 - (4) Where on-site canopy and tree preservation performance standards cannot be met due to adverse site conditions, the process and standards in section 62-4345 shall be applied.

(Ord. No. 06-55, § 11, 10-24-06; Ord. No. 08-01, § 9, 1-8-08; Ord. No. 09-24, § 6, 9-15-09; Ord. No. 2010-01, § 1(Attch. B), 1-12-10)

Sec. 62-4340. - Tree root protection and planting chart.

If an existing tree meets the tree root protection and planting chart requirements, the entire canopy shall count toward the preserved canopy. This includes canopy over impervious surfaces.

Tree Root Protection and Planting Chart			
The intent of this chart is to provide location(s) of required tree barriers, total planting areas and encroachment distances to trees.			
Tree Species**	Root Protection Zone Area (during construction) Preserved Trees	Total Planting Area (minimum) Preserved and Planted Trees	Minimum Distance (within 50 percent of the dripline) Preserved and Planted Trees
Small	90 square feet or dripline, whichever is less	100 square feet	2 feet

Medium	200 square feet or dripline, whichever is less	225 square feet	6 feet
Large	36 inches dbh or dripline, whichever is less = 625 square feet; Greater than 36 inches dbh = 5 × dbh	300 square feet primary* 900 square feet secondary*	8 feet
*Encroachment can occur within the secondary area (between 300 and 900 square feet) for the implementation of construction of an approved alternative surface or sub-surface method for preventing soil compaction, and/or promoting aeration and hydration. Examples of such methods are outlined in University of Florida Cooperative Extension Service's publication ENH 1056 entitled Urban Design for a Wind Resistant Urban Forest, as may be amended.			
**As defined in <u>section 62-4332</u>.			

For palm trees, the root protection zone area shall be 25 square feet and have a radius no less than two feet.

(Ord. No. 09-24, § 7, 9-15-09)

Sec. 62-4341. - Landscaping performance standards.

Unless specifically exempted by section 62-4335 or otherwise provided for by resolution, all development shall meet the performance standards listed in this section. Single-family lots less than 2.5 acres but greater than 1.25 acres are exempt from removal and replacement criteria as outlined in subsection 62-4341(18), but must preserve or relocate specimen trees on-site to the greatest extent feasible. Single-family lots 1.25 acres or less are exempt from removal and replacement criteria as outlined in subsection 62-4341(18), including specimen tree criteria. Special landscaping overlays may be enacted by county ordinance.

- (1) No certificate of occupancy or certificate of completion shall be issued by the county without full satisfaction of the following landscaping requirements by the applicant in accordance with the approved development order.
- (2) Satisfaction of the landscaping standards shall be achieved through the preservation of existing native vegetation to the greatest extent feasible. When the minimum landscaping standards cannot be achieved through preservation, plantings of new vegetation shall be required to meet the standards.
- (3) All development shall meet the following standards through preservation, plantings, or a combination thereof:

Minimum large/medium/small trees per acre of area of alteration. Minimum size specifications shall be as outlined in subsection 62-4340(8). For area of alteration greater than one acre, minimum trees shall be determined by multiplying the minimum trees per acre by the actual area of alteration to one decimal place (i.e. five trees/acre × 1.5 acres area of alteration = eight trees). Lots containing 0.10 acre or less of area of alteration shall provide no less than two trees. Greater than 0.10 acre of area of alteration but less than 0.15 acre of area of alteration shall provide no less than three trees. Where calculations yield fractions of trees, required trees shall be rounded up to the nearest full tree. No less than 50 percent of trees shall be large species. No less than 25 percent shall be of medium species.

Minimum number of shrubs and groundcovers, not including sod, per acre of area of alteration. Minimum shrubs shall be determined by multiplying the minimum shrubs/groundcover plants required per acre by the actual area of alteration to one decimal place (i.e. 125 shrubs/acre $\times$.5 acre area of alteration = 63 shrubs required).

125

Minimum standard is a three-gallon fully rooted 15—18 inches in height shrub or equivalent.

Preservation of 16 square feet of native understory is equal to one three gallon fully rooted 15—18 inches in height planted shrub. Where calculations yield fractions of shrubs, required shrubs shall be rounded up to the nearest full shrub.



All plantings shall be at least Florida No. 1 grade as defined by the Grades & Standards for Nursery Plants, 1998. Division of Plant Industry, Florida Department Agriculture and Consumer Services, as may be amended. Fruit and nut crops, appropriate to Brevard County, shall be considered for credit towards required plantings provided size specifications, as outlined above, are met.

- (4) At least 50 percent of trees required for preservation and planting shall be of native species. At least 50 percent of shrubs and groundcovers shall be native species or recommended by "Waterwise Florida Landscapes", 2004. Florida Water Management Districts, as may be amended. vegetation defined as nonnative invasive or undesirable plants per section 62-4332 shall not be credited towards fulfillment of preservation or planting requirements.
- (5) Road frontage and vehicular use areas. This section does not apply to single-family lots, parcels or lots platted as part of an approved subdivision. For residential subdivisions and commercial, public, institutional, or industrial projects, the following specific locational landscape requirements shall be satisfied:
 - a. Type B, roadway buffer in accordance with the vegetative buffering requirements of this division.
 - b. To mitigate the Heat Island Effect, vehicular use areas shall have appropriate shading.
 - i. For each ten parking spaces, one planted or preserved tree shall be provided and distributed throughout the parking area. Plantings may be clustered to promote healthy trees and sustainable design. For all vehicular use areas, 25 percent of the required trees shall be large species of minimum size. Medium size tree species shall also meet minimum size requirements. Small species shall constitute a maximum 25 percent of the required trees and shall meet minimum size specifications.
 - ii. Parking spaces immediately abutting a landscape buffer required pursuant to section 62-4341 or vegetated lands of comparable quality subject to a recorded plat condition. Declaration of covenants, or with sufficient protective language, noted on the approved landscape plan, to prohibit activities that are detrimental to the perpetual preservation of the area, shall be exempted from this subsection.
 - iii. Where bus, recreational vehicle, boat, motorcycle, golf cart, or any other nonstandard spaces are provided, a landscape island twice the size of each nonstandard space shall be provided for each ten nonstandard spaces. There shall be one planted or preserved tree (minimum 2.5 inches caliper) for every 300 square feet contained within the landscape island.
 - c. For commercial and industrial uses, for each 400 square feet of vehicular use area other than parking, there shall be an additional ten square feet of landscaping. The placement of this must be in association with the vehicular use area and shall be integrated within the vehicular use area in a manner compatible with vehicular movement.
- (6) Additions or modifications to existing structures. Any applicant for an active development order for an external expansion, modification or addition to structures existing on the property, where the expansion or addition shall increase the applicable floor area of the structure at least 50 percent for single-family residential dwellings and 25 percent for all other development shall comply with all landscaping requirements specified in this division. Where

demolition of existing buildings or creation of separate buildings is being proposed or has occurred, these areas shall meet current performance standards. Where vehicular use areas are being expanded or replaced, such areas shall be required to meet the standards in subsection 62-4341(5) as applicable. Where expansion for all development, excluding single-family residential dwellings, is visible from the road from any angle, pavement or concrete cut-outs shall be required to satisfy buffer and parking lot landscape islands to mitigate the Urban Heat Island Effect. Buffer requirements shall follow those outlined in section 62-4342 where feasible. Parking lot landscape island requirements shall follow those outlined in subsections 62-4341(5)(b) and (c) where feasible. Alternative landscape enhancement plans shall not be required for cut-outs that can not feasibly meet the strict application of the requirements, landscape plans shall be reviewed as standard landscape and land clearing applications.

- (7) Standards for plant materials. All plant materials utilized to satisfy the landscaping requirements in this division shall conform to the standards for Florida No. 1 grade as defined by the Grades & Standards for Nursery Plants. 1998, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, as may be amended.
- (8) Minimum size of newly planted trees. Trees used to fulfill the landscaping requirements in this division, shall meet the following overall height, caliper and spread requirements, at the time of planting, by species classification:
 - a. Large species: Twelve feet tall with 2.5-inch diameter (caliper) minimum and five-foot spread.
 - b. Medium species: Ten feet tall with 1.5-inch diameter (caliper) minimum and three-foot spread.
 - c. Small species: Eight feet tall with one-inch diameter (caliper) minimum and two-foot spread.
 - d. Palms: Ten feet of clear trunk.

For single-family residential lots, eight feet tall, one inch minimum caliper, three-foot spread trees may be substituted on a 3:1 basis for each required large species tree.

- (9) Use of palms. Preservation of palms, or the planting of palms, may only be used to satisfy up to 25 percent of the required landscaping unless barrier island conditions prohibit the use of less salt-tolerant plants.
- (10) Use of synthetic plants. In no event shall synthetic plants such as manmade, plastic, rubber or silk plants be used for landscaping credits. Removal of existing landscape materials for installation of synthetic plants is prohibited.
- (11) Selection of plant materials. The selection of new plant materials or preservation of existing vegetation to satisfy the landscaping or preservation requirements in this division shall be compatible with the proposed use of the site, type of soils, hydroperiods, climate, water quality and other general environmental concerns.
- (12) Location of plant materials. The vegetation utilized to satisfy the landscaping requirements in this division shall be located on the site in such a manner that the vegetation shall:
 - a. Not interfere with drainage systems or utility services or create an unsafe visual clearance or other safety or maintenance hazard. This does not prohibit the appropriate plantings in stormwater retention or detention areas or within utility easements.
 - b. Be placed in a manner that will not interfere with vehicular or pedestrian traffic and circulation or visibility.
 - c. Be protected from vehicular encroachment.
- (13) Planting in homeowner association (HOA) owned property/tracts/landscape easements/right-of-way. Single-family homeowners may plant required landscaping in immediately adjacent homeowner association owned property/tracts/landscape easements/right-of-way. These plantings shall be credited toward satisfaction of landscaping requirements provided that:
 - a. The plantings are part of a landscape plan approved as part of the final plat for the development or written agreement such as HOA documents shall be provided that demonstrate that such planting are permissible. Homeowner must provide written documentation verifying HOA approval of proposed plantings.
 - b. The area of planting is included in the area of alteration calculation.
- (14) Site preparation. Before landscape installation, the applicant shall provide documentation that the soils are suitable for the prescribed plantings. Any soil amendments shall be preformed in accordance with accepted industry

standards. For multifamily, institutional, public, residential subdivisions, commercial and industrial development, certification by a registered or certified landscape professional will be required as proof that such soil amendments have been made prior to the issuance of the certificate of occupancy or completion.

- (15) Prior to the issuance of the certificate of occupancy or certificate of completion for single-family, subdivision, multifamily, commercial, institutional, public and industrial projects, and at the time of development of government-owned lands, all nonnative invasive plants, as defined in this division, shall be removed. For lots greater than five acres, the requirement to remove and control re-growth of nonnative invasive plants applies to five contiguous acres to and including the area of alteration as defined in section 62-4332. After the issuance of the certificate of occupancy or certificate of completion, re-growth of nonnative invasive plants shall be controlled in perpetuity. The requirements to remove nonnative invasive plants at the time of development and control re-growth of such plants in the required area within the site shall apply countywide and prospectively to property after October 24, 2006. Australian pine may be retained on-site with a waiver from the director if maintained at its current extent.
- (16) For projects using Xeriscaping™ or water-wise landscaping, the following criteria shall be met:
- a. Landscape plans must clearly demonstrate that plant species are grouped by hydrozones (i.e., natural areas, drought tolerant areas, and oasis areas). In addition, the landscape must be installed as detailed in the landscape plan.
 - b. Property must be 100 percent free of nonnative invasive and undesirable plants.
 - c. A layer of at least three inches of nonsynthetic inorganic or organic mulches must be present. The use of mulch containing Chromated Copper Arsenate (CCA) is expressly prohibited. NRMO has the authority to inspect and require testing of newly placed mulch material for CCAs and the responsibility to deny final approval of a landscape plan if mulches containing CCAs are used.
 - d. No more than 50 percent of the landscape shall be equipped with high volume (micro) irrigation delivery systems.
 - e. Soil analysis and letter confirming appropriate amendments must be submitted to NRMO.
 - f. Property must be free of nuisance vegetation as defined in chapter 114, article II.
 - g. Landscape must be appropriately maintained. Improper pruning shall not constitute appropriate maintenance. In no event shall overgrowth as defined in chapter 114, article II be allowable as Xeriscaping™ or water-wise landscaping.
 - h. Consistent with Florida law, the automatic irrigation system, if any, must be equipped with an automatic rain sensor shut-off device.
 - i. If criteria in [subsections] a. through h. are met in their entirety, NRMO may provide special recognition in the form of a listing on the Brevard County web site or via signage to be displayed in the landscape and a 50 percent reduction of the required shrubbery square footage per acre of area of alteration shall be credited.
 - j. Any yard conforming to the Florida Native Back Yard Program or any similar program officially endorsed by the State of Florida shall not constitute a nuisance.
- (17) Performance bond. When the county manager or designee determines that circumstances indicate that the planting of trees or vegetation prior to the issuance of a certificate of occupancy or certificate of completion would not be prudent, for reasons such as an improper time of year for the planting of trees, the applicant may post a performance bond with the board of county commissioners, in a form acceptable to the county. The performance bond, if posted, shall be in an amount of no less than 125 percent of the estimated cost of all trees and vegetation to be planted, plus labor, pursuant to the requirements of this division. The performance bond shall be received and accepted by the county prior to the issuance of the certificate of occupancy or certificate of completion.
- (18) Replacement criteria. Specimen and protected trees shall be preserved or relocated on-site to the greatest extent feasible. Where the site, parcel or lot has met canopy coverage requirements as outlined in section 62-4339, without the use of an alternative landscape enhancement plan, site, parcel or lot shall not be subject to

replacement criteria with the exception of specimen trees. Where the removal of a protected or specimen tree is necessary below the minimum canopy preservation percentage required per section 62-4339, an alternative landscape enhancement plan shall be required that meets the criteria in section 62-4344.

(Ord. No. 06-55, § 12, 10-24-06; Ord. No. 08-01, § 10, 1-8-08; Ord. No. 09-24, § 8, 9-15-09)

Sec. 62-4342. - Landscape buffers.

The purpose of the vegetative buffering requirements set out in this section is to provide visual and physical screening and buffering between potentially incompatible uses and to reduce the effects of glare, noise and incompatible activities, to include commercial, institutional, public, and industrial uses when they abut existing residential uses.

- (1) *Type A, compatibility buffer.* Where a fence or wall is required by article VI of this chapter, the Type A buffer, as defined in this subsection, may be utilized in lieu of the required fence or wall. This buffer classification shall be used to separate commercial, institutional, public or industrial uses from residential uses. The Type A buffer shall be completely opaque from the ground up to a height of at least six feet, except where located within 25 feet of a road, where it shall be four feet in height. In conjunction with this buffer, a minimum 20-foot vegetated area shall be provided. There shall be no parking or structures other than permitted signage located within this vegetated area.
 - a. The opaque buffer may utilize a masonry wall, wood fence, landscaped earth berm, planted or existing vegetation or any combination thereof that maintains a completely opaque buffer.
 - b. Location of fences and walls. Where a fence or wall is used to fulfill the screening requirements within a vegetative buffer, it shall be located one foot inside of the property line that abuts the residential zoning. When an impediment such as a drainage easement, ditch or water body runs along a property line, an administrative waiver may be granted by the director to allow the masonry wall or fence to be placed along the edge of the ditch or water body instead of on the property line. Where there are existing trees within the buffer area, the fence or wall shall be located so as to preserve the trees.
- (2) *Type B, roadway buffer.* This buffer classification shall be required for all development excluding individual single-family homes not within platted subdivisions. This buffer shall be landscaped, be located adjacent to any public road and have a minimum width of 15 feet. There shall be no parking or structures other than permitted signage located within this vegetated area.
- (3) *Planting requirements.* The planting requirements for the vegetative buffer areas shall be consistent with Appendix B as amended, and shall be credited toward the overall landscaping requirements. Minimum buffering and landscaping of vehicular use areas shall be met regardless of other requirements.

(Ord. No. 06-55, § 13, 10-24-06; Ord. No. 08-01, § 11, 1-8-08; Ord. No. 09-24, § 9, 9-15-09)

Sec. 62-4343. - Maintenance and inspections.

- (1) Except as allowed by subsection 62-4341(17), the health and viability of all required landscape materials on the site, whether preserved or newly planted, must be maintained through proper care or replacement in perpetuity after issuance of the certificate of occupancy, certificate of completion, or restoration as may be required to resolve a code violation.
- (2) For multifamily, residential subdivisions, commercial, institutional, public and industrial projects, failure to have viable landscape materials or preserved areas consistent with the approved landscape plan after of the issuance of the certificate of occupancy or certificate of completion shall constitute a violation as described under section 62-4336. Failure to remove nonnative invasive plants and control re-growth prior to the final landscaping inspection is a violation of this division and shall be enforced pursuant to section 62-4336. The county reserves the right to enter property to make the necessary inspections.
- (3) An on-site inspection shall be conducted prior to the approval of the land clearing permit.

(Ord. No. 06-55, § 14, 10-24-06; Ord. No. 08-01, § 12, 1-8-08; Ord. No. 09-24, § 10, 9-15-09)

Sec. 62-4344. - Incentives for increased canopy and tree preservation and increased landscaping.

To encourage the preservation of canopy, protected trees and specimen trees, the following incentives are provided. Incentives shall not in any case be used to offset the requirements in subsection 62-4341(5) and section 62-4342 except as authorized in [subsection] (3)(d) of this section.

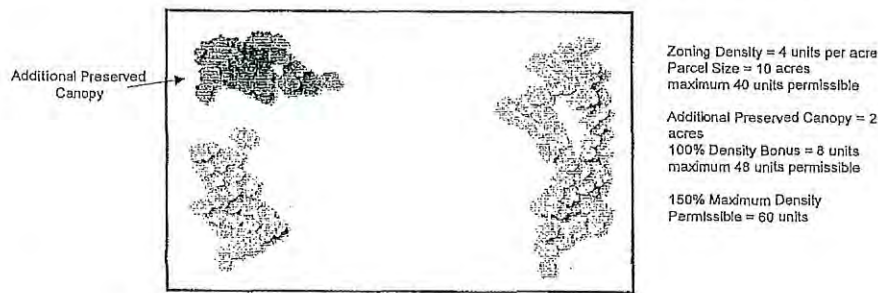
- (1) *Tree preservation.* A preserved/relocated native tree in excess of the minimum required under sections 62-4339, 62-4341, and 62-4342 that meets the standards below may be substituted for any of the trees required by the landscaping requirements of this section.

- a. Credit ratio: Preserved/relocated native trees shall be credited for required trees, pursuant to the following ratio:

DBH of Preserved/Relocated native tree	Preserved Tree Credit Ratio towards required trees	Relocated Tree Credit Ratio towards required trees
over 30"	16	8
25—30"	10	5
19—24"	8	4
13—18"	6	3
8—12"	4	2

- b. Trees ineligible for credit ratio: No credit shall be granted for trees:

1. Defined as nonnative invasive plants per section 62-4332.
 2. Palms of any species.
 3. Dead, dying, diseased or insect infested.
 4. Damaged from improper pruning defined in section 62-4332.
 5. For preserved trees, where root protection zones have been impacted in conflict with section 62-4340.
 6. Where native understory, if present, has not been preserved within the root protection zone.
 7. For relocated trees, where relocation techniques have not been approved by NRMO as part of approved landscape plan.
- (2) For preservation of canopy greater than the minimum total canopy required for the land use and its associated root protection zone, a density bonus equal to 100 percent of the excess canopy preservation area shall be granted not to exceed 150 percent of the density assigned to the property. If other density transfers or bonuses are used in combination with this incentive, the overall density of the property shall not exceed 150 percent of that permitted by the zoning district.



Example of Density Bonus

- (3) *Preservation of vegetation of special concern.* In addition to credit for additional preservation of trees or canopy, landscaping credit may be accumulated for the preservation on the site of any of the following vegetation of special concern that is in a healthy condition:
- For each 100 square feet of land containing no dimension less than ten feet, that is predominately vegetated by rare, endangered or threatened plant species as listed in Volume 5, Plants, Rare and Endangered Biota of Florida, University Presses of Florida, Gainesville, Florida, and as listed in F.S. § 581.185, the property owner shall receive 200 square feet of landscape credit for that class of vegetation. No species of Mangroves shall be eligible for points under this subsection.
 - For each 100 square feet of vegetation classified as hardwood hammock, barrier island scrub, cypress domes or sand pine scrub associations preserved on the site, total tree planting requirements shall be reduced by five percent when the vegetative community is preserved intact; and the vegetative community preserved comprises an area of no less than 100 square feet with no dimension less than ten feet. Where the reduction includes replacement inches, each 100 square feet of preservation shall not exceed a value of 20 inches dbh replacement inches as required per subsection 62-4331(18).
 - For each 100 square feet of vegetation classified as barrier island association preserved on the site, landward of the county coastal setback line, total landscaping requirements shall be reduced by five percent when the vegetative community is preserved intact and the vegetative community preserved comprises an area of no less than 100 square feet with no dimension less than ten feet. Where the reduction includes replacement inches, each 100 square feet of preservation shall not exceed a value of 20 inches dbh replacement inches as required per subsection 62-4331(18).
 - For each 100 square feet of native vegetation preserved adjacent to a scenic vista or public roadway classified as arterial or collector, Type B, roadway buffer requirements may be waived for the equivalent area if the native vegetative community is preserved and maintained intact and the vegetative community preserved comprises an area of no less than 100 square feet with no dimension less than ten feet.
 - If Mangroves do not presently exist on shorelines contiguous to estuarine waters and are planted on four-foot centers, the requirements for shrubs may be reduced accordingly. The minimum size of newly planted Mangroves shall be fully rooted three-gallon container plants with a minimum height of 15—18 inches.

(Ord. No. 06-55, § 15, 10-24-06; Ord. No. 08-01, § 13, 1-8-08; Ord. No. 09-24, § 11, 9-15-09)

Sec. 62-4345. - Alternative landscape enhancement plans, mitigation, and compensation.

In cases of adverse site conditions or hardship, alternative landscape enhancement plans may be considered. Such plans shall be signed and sealed by a landscape architect registered in the State of Florida except for individual single-family homes not part of a platted subdivision. Alternative landscape enhancement plans may consist solely or a combination of on-site preservation, landscaping enhancement, on-site mitigation, off-site mitigation and compensation. In all cases, the standards for alternative landscape enhancement plans shall be, in combination or as stand-alone solutions, on-site preservation of existing native vegetation, on-site landscape enhancement, on-site mitigation, off-site mitigation, and compensation.

- (1) Alternative landscape enhancement plans are intended to provide increased flexibility for sites demonstrating existing conditions. Alternative landscape enhancement plans shall meet the following performance standards on-site:
 - a. Results in landscaping that exceed specific goals and intent of landscape regulations.
 - b. Provides sufficient tree plantings to achieve a tree canopy equal to five percent greater than the minimum required at the time of development.
 - c. Provides heat island mitigation and landscape buffers, as required by the landscaping code.
 - d. Replaces protected trees with new plantings of canopy species trees at a rate of 25 percent of the cumulative diameter at breast height (dbh) of the trees removed, using a minimum 50-percent four-inch caliper plantings. The remaining 50 percent replacement plantings shall be a minimum two and one-half inch caliper plantings. Of the two and one-half inch caliper plantings, up to 20 percent may be non-native. In no event shall undesirable or non-native invasive plantings be used for replacement.
 - e. Specimen trees shall be preserved or relocated on site to the greatest extent feasible. Specimen trees that can not be preserved or relocated on site shall be subject to replacement with new plantings of canopy species trees at a rate of 33 percent of the cumulative diameter at breast height (dbh) of the trees removed, using a minimum four-inch caliper plantings. The remaining 50 percent replacement plantings shall be a minimum two and one-half inch caliper plantings. Of the two and one-half inch caliper plantings, up to 20 percent may be non-native. In no event shall undesirable or non-native invasive plantings be used for replacement.
 - f. Where scrub oaks (*Quercus myrtifolia*, *Q. chapmanii*, *Q. inopina*, *Q. virginiana* var. *maritime*, *Q. geminata*) are removed from a site, parcel or lot, and the project is subject to an Alternative Landscape Enhancement Plan, replacement shall be at 150% on a square footage basis. Replacement of scrub oaks on-site shall be achieved to the greatest extent feasible. Replacement shall be with minimum three-gallon scrub oak plant material, however a minimum of 25 percent of the planted area shall be seven gallons or larger. Spacing radius shall be equal to height of scrub oak material obtained. Where replacement on-site is not possible due to adverse site conditions, compensation may be considered as established by resolution.
 - g. Parking shall not exceed the minimum required for the proposed use(s).
 - h. For sites where greater than 75 percent of the existing canopy is of the same genus, replacement trees shall be exempt from subsection 62-4339(2)(a).
- (2) *Mitigation*. When the applicant has provided clear and convincing evidence that demonstrates the canopy preservation and tree preservation performance standards can not be met on the subject property, the applicant may submit an alternative landscape enhancement plan that includes mitigation. Mitigation can consist of a combination of restoration and replacement of trees and canopy through tree plantings, relocation of trees to another site, (with written authorization from the receiving property owner), off-site canopy preservation or monetary compensation. For all mitigation, except for compensation, the applicant is responsible for maintenance in perpetuity. The types of mitigation and applicable standards are as follows:
 - a. Restoration and replacement.
 - i. For every protected tree that can not be preserved or re-located on-site, the size of the replacement tree shall be at least four inches dbh and the number of planted trees required shall be determined by a ratio of 25 percent of the protected tree's dbh. Replacement trees shall be native canopy species trees, as approved by NRMO.
 - ii. Specimen trees that can not be preserved or relocated on-site shall be subject to replacement with new plantings of native canopy species trees, as approved by NRMO, at a rate of 33 percent of the cumulative diameter at breast height (dbh) of the trees removed, using a minimum four-inch dbh plantings.
 - iii. All restoration or replacement areas shall be permanently protected in a recorded plat condition, or declaration of covenants recorded in the official records of Brevard County, or with sufficient protective language, as noted on the approved landscape plan, which shall be noted as a condition of approval, in property records maintained by Brevard County government.

- b. Relocation.
 - i. For every protected tree that can not be preserved or reasonably relocated on-site, the protected tree may be relocated to another site acceptable to the county. Reasonable relocation includes techniques such as root pruning, tree spades and other similar techniques. Relocation techniques shall be reviewed and approved by the county prior to being used for any relocation of trees both on and off the property.
 - ii. All relocation areas shall be permanently protected in a recorded plat condition, or declaration of covenants recorded in the official records of Brevard County, or with sufficient protective language, as noted on the approved landscape plan, which shall be noted as a condition of approval, in property records maintained by Brevard County government.
 - c. Off-site preservation. Off-site preservation will be based on square footage of canopy at a ratio of two to one of similar quality and diversity. Equal to or greater quality and diversity shall be determined by a certified arborist.
- (3) *Compensation.* Compensation for the loss of canopy and protected trees shall be determined as follows:
- a. Compensation (C) for trees of known Number REMoved (NREM) and known Total DBH (TDBH) shall be calculated using the costs established by resolution.
 - b. Compensation for trees of known Number REMoved (NREM) but unknown total diameter shall be calculated using the costs established by resolution.
 - c. Compensation for trees for which neither the total diameter nor the number can be determined shall be made under the assumption that the site is 100 percent forested. Compensation shall be calculated using the costs established by resolution, or the valuation provided by a tree appraisal conducted by an arborist certified by the International Society of Arboriculture or landscape architect registered in the State of Florida and where the appraisal was conducted in accordance with the methodology contained in the Guide for Plant Appraisal, 9th edition, as amended and published by the International Society of Arboriculture.
 - d. Compensation for specimen trees illegally removed or destroyed shall be three times the calculated cost of C.
 - e. All compensation funds shall be deposited in the trust fund established by section 62-4336 of this division.

(Ord. No. 06-55, § 16, 10-24-06; Ord. No. 08-01, § 14, 1-8-08; Ord. No. 09-24, § 12, 9-15-09; Ord. No. 2010-01, § 2(Attch. B), 1-12-10)

Sec. 62-4346. - Waivers.

- (1) An administrative waiver to the requirements of this Code may be granted when the director has determined that:
- a. The site will not support the required trees and vegetative communities to be preserved as well as the required landscaping. This situation may occur when preservation far exceeds what is required by Code, thereby limiting planting area.
 - b. Up to 34 percent reduction in required Type A and/or Type B buffer depth is warranted due to adverse site conditions. The reduced buffer shall meet vegetative and opacity requirements pursuant to section 62-4342. The applicant shall also provide visual and physical screening and buffering between potentially incompatible uses to reduce the effects of glare, noise and incompatible activities, including but not limited to circumstances where commercial, institutional, public, and industrial uses abut existing residential uses to the greatest extent feasible.
 - c. Type A and/or Type B buffers cannot be installed due to safety concerns verified in writing by a law enforcement agency.
 - d. A specimen tree meeting size criteria does not meet the definition because it is not unique based on its age, rarity or special historical or ecological significance considering the immediate site or surrounding area.
 - e. Pre-development impervious coverage of a root protection zone has not historically adversely impacted the viability of the tree, the tree may still be counted toward canopy, tree preservation and landscaping performance standards pursuant to sections 62-4339, 62-4340 and 62-4341.
 - f. A redevelopment site cannot reasonably comply with the buffer requirements of section 62-4342 due to adverse

site conditions and compliance with the buffer requirement unduly impairs the intended use of the property. Where the buffer waiver is approved, the site shall meet opacity requirements pursuant to section 62-4342. The applicant shall also provide visual and physical screening and buffering between potentially incompatible uses to reduce the effects of glare, noise and incompatible activities, including but not limited to circumstances where commercial, institutional, public, and industrial uses abut existing residential uses to the greatest extent feasible. The applicant must demonstrate that efforts have been taken to meet these requirements in locations where appropriate. This waiver may only be approved where acceptable mitigation is demonstrated in an Alternative Landscape Enhancement Plan (ALEP) to mitigate for the lack or reduction of buffers. For Type A buffer waivers, the ALEP must be approved as part of a public hearing process with notification to contiguous property owners to address neighboring residential concerns. Advertising and notification costs shall be the responsibility of the applicant.

It is the intent of this division that preservation of native and Florida-friendly vegetation shall take precedence over additional planting of vegetation.

- (2) When the county manager or designee determines that a minor administrative adjustment to the applicable parking standards in nonresidential zoning classifications would allow for the preservation or additional planting of native or Florida-Friendly Landscaping on the site, upon a written request by the applicant, together with a vegetation survey, submitted with the required landscaping plan, the county manager or designee may administratively waive up to 30 percent of the applicable parking standards for the property. If the parking requirements of any other section of this Code conflict with the landscaping requirements of this division, the conflict may be resolved by the county manager or designee.

(Ord. No. 08-01, § 15, 1-8-08; Ord. No. 09-24, § 13, 9-15-09; Ord. No. 2012-28, § 2, 9-4-12)

Sec. 62-4347. - Appeals.

Any appeals relating to any administrative decision or determination concerning implementation or application of the provisions of this division shall be filed in accordance with the provisions set forth in Section 62-507, Brevard County Code.

(Ord. No. 08-01, § 16, 1-8-08; Ord. No. 09-24, § 14, 9-15-09)

Secs. 62-4348—62-4360. - Reserved.

DIVISION 3. - RESERVED

Footnotes:

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Editor's note— Ord. No. 06-55, §§ 1, 2, adopted October 24, 2006, repealed division 3, §§ 62-4361—62-4367 in its entirety, which pertained to land clearing and tree protection and derived from the Code of 1979, §§ 14-111.1—14.111.6; Ord. No. 99-54, § 1, adopted October 12, 1999; Ord. No. 02-26, §§ 5, 6, adopted May 21, 2002; Ord. No. 02-35, § 10, adopted July 23, 2002. Similar provisions may be found at division 2.

Secs. 62-4361—62-4390. - Reserved.

DIVISION 4. - LAND ALTERATION

Subdivision I. - General Provisions

Sec. 62-4391. - Definitions.

For the purpose of this division, the following terms shall have the meaning set forth in this section:

Sec. 18A-6. - Minimum standards.

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The following standards shall be considered minimum requirements unless otherwise indicated:

(A) *Lawn area (turf).*

- (1) Grass areas shall be planted in species well adopted to localized growing conditions in Miami-Dade County. Grass areas may be sodded, plugged, sprigged, hydromulched, or seeded except that solid sod shall be used in swales or other areas subject to erosion. In areas where other than solid sod or grass seed is used, overseeding shall be sown for immediate effect and protection until coverage is otherwise achieved.
- (2) Exclusions from maximum permitted lawn areas:
 - (a) Stabilized grassed area used for parking;
 - (b) Grassed areas designated on landscape plans and actively used for sports, playgrounds or picnic areas;
 - (c) Grassed areas in the right-of-way;
 - (d) Stormwater retention/detention areas planted in grasses which are very drought tolerant, as referenced in the Landscape Manual, as well as tolerant to wet soils.
- (3) Maximum permitted lawn area for all residential and mixed uses in the unincorporated area is referenced in Table A.
- (4) Maximum permitted lawn area for all office, commercial, and industrial uses is as referenced in Table A. Very drought tolerant grasses and low growing native plants, including grasses and forbs, as referenced in the Landscape Manual, may be used as groundcover beyond the maximum permitted grass area specified in Table A.
- (5) In municipalities, the maximum amount of lawn area for residential and mixed uses shall be limited to a maximum of sixty (60) percent of the landscaped open space required in the individual municipal code(s). In those residential and mixed use zoning districts where landscaped open space is not specified, lawn areas shall be restricted to a maximum of fifty (50) percent of the net lot area. Lawn areas in commercial, office and industrial zones shall be limited to a maximum of twenty (20) percent of the open space required by the individual municipalities. In those commercial, office and industrial zones, where landscaped open space is not specified, lawn area shall be restricted to a maximum of twenty (20) percent of the net lot area less the area covered by buildings. Very drought tolerant grasses and

low growing native plant species, including grasses and forbs, as referenced in the Landscape Manual, may be used as groundcover beyond the maximum permitted grass area.

(B) *Irrigation.*

- (1) All newly-planted and relocated plant material shall be watered by temporary or permanent irrigation systems until such time as they are established and subsequently on as-needed basis to prevent stress and die-off in compliance with existing water use restrictions.
- (2) Irrigation shall be prohibited within native plant communities and natural forest communities, except for temporary systems needed to establish newly planted material. Temporary irrigation systems shall be disconnected immediately after establishment of plant communities.
- (3) Irrigation systems shall be designed, operated and maintained to:
 - (a) Meet the needs of all the plants in the landscape.
 - (b) Conserve water by allowing differential operation schedules based on hydrozone.
 - (c) Consider soil, slope and other site characteristics in order to minimize water waste, including overspray or overflow on to impervious surfaces and other non-vegetated areas, and off-site runoff.
 - (d) Minimize free flow conditions in case of damage or other mechanical failure.
 - (e) Use low trajectory spray heads, and/or low volume water distributing or application devices.
 - (f) Maximize uniformity, considering factors such as:
 - (1) Emitters types,
 - (2) Head spacing,
 - (3) Sprinkler pattern, and
 - (4) Water pressure at the emitter.
 - (g) Use the lowest quality water feasible (graywater shall be used where approved systems are available).
 - (h) Rain switches or other devices, such as soil moisture sensors, shall be used with automatic controls.

Operate only during hours and on days permitted under Chapter 32 of the Code of Miami-Dade County.
 - (i) Where feasible, drip irrigation or micro-sprinklers shall be used.
- (4) During dry periods, irrigation application rates of between one (1) and one and

one-half (1½) inches per week are recommended for turf areas.

- (5) If an irrigation system is not provided, a hose bib shall be provided within seventy-five (75) feet of any landscape area.

(C) *Trees.*

- (1) *Tree size.* All trees, except street trees, shall be a minimum of ten (10) feet high and have a minimum caliper of two (2) inches at time of planting except that thirty (30) percent of the tree requirement may be met by native species with a minimum height of eight (8) feet and a minimum caliper of one and one-half (1½) inches at time of planting.
- (2) *Street tree size and spacing.* Street trees shall be of a species typically grown in Miami-Dade County which normally mature to a height of at least twenty (20) feet. Street trees shall have a clear trunk of four (4) feet, an overall height of twelve (12) feet and a minimum caliper of two (2) inches at time of planting, and shall be provided along all roadways at a maximum average spacing of thirty-five (35) feet on center, except as otherwise provided in this chapter. Street trees are not required when a colonnade open to the public is located within four (4) feet of the edge of the roadway. The thirty-five (35) foot average spacing requirement for multiple single family units such as zero-lot-line and townhouse shall be based on the total lineal footage of roadway for the entire project and not based on individual lot widths. Street trees shall be placed within the swale area or shall be placed on private property where demonstrated to be necessary due to right-of-way obstructions as determined by the Public Works Department or the appropriate authority within the municipality. Street trees planted along private roadways shall be placed within seven (7) feet of the edge of roadway pavement and/or where present within seven (7) feet of the sidewalk.
- (3) *Power lines.* Where the height and location of overhead powerlines requires the planting of low growing trees, street trees shall have a minimum height of eight (8) feet, a minimum caliper of one and one-half (1½) inches at time of planting, and shall meet the following requirements:
- (a) Single trunk trees clear of lateral branches to four (4) feet and/or multitrunk trees or tree/shrubs, as referenced in the Landscape Manual, cleared of foliage to a height of four (4) feet.
 - (b) A maximum average spacing of twenty-five (25) feet on center.
 - (c) Maturing to a height and spread not encroaching within five (5) feet of overhead power distribution lines.
 - (d) Under high voltage (50kV and above) transmission lines installed independent of underbuilt distribution lines, tree height and spread shall not

exceed the minimum approach distances specified in the current ANSI (American National Standards Institute) Z133.1 Standards, as referenced in the Landscape Manual.

- (4) *Palms*. Palms which meet all of the following requirements shall count as a required street tree on the basis of one (1) palm per tree.
- (a) Minimum canopy of fifteen (15) feet at maturity.
 - (b) Provided at an average maximum spacing of twenty-five (25) feet on center.
 - (c) Fourteen-foot minimum overall height or minimum caliper of four (4) inches at time of planting.

It is provided however that queen palms (*Syagrus romanzoffiana*) shall not be allowed as street trees.

- (5) Minimum number of trees. Within Unincorporated Miami-Dade County, the minimum number of required trees, in addition to street trees, is referenced in Table A.

TABLE A (See note below regarding street trees)				
LAND USE OR ZONING DISTRICT	NUMBER OF TREES REQUIRED		MAXIMUM LAWN AREA	
	Per Acre of Net Lot Area	Per Lot	Percent of Net Lot Area	Percent of Required Open Space
SINGLE FAMILY RESIDENTIAL AND DUPLEX				
RU-1	-	3	50%	-
RU-1M(a)	-	3	35%	-
RU-1M(b)	-	3	35%	-
RU-1Z	-	3	35%	-
RU-2	-	3	50%	-

TOWN HOUSE				
RU-TH	28	-	-	60%
ESTATE USE				
EU-M	9	-	50%	-
EU-S	9	-	50%	-
EU-1	9	-	60%	-
EU-2	9	-	60%	-
EU-1C	9	-	60%	-
MULTI-FAMILY RESIDENTIAL				
RU-3	28	-	60%	-
RU-3B	28	-	60%	-
RU-3M	28	-	-	60%
RU-4L	28	-	-	60%
RU-4M	28	-	-	40%
RU-4	28	-	-	40%
RU-4A	28	-	-	40%
OFFICE				
RU-5	28	-	-	30%
RU-5A	28	-	-	30%

OPD	28	-	-	30%
COMMERCIAL				
BU-1	22	-	-	20%
BU-1A	22	-	-	20%
BU-2	22	-	-	20%
BU-3	22	-	-	20%
INDUSTRIAL				
IU-1	15	-	-	20%
IU-2	15	-	-	20%
IU-3	15	-	-	20%
IU-C	22	-	-	20%
MISCELLANEOUS ZONING DISTRICTS AND LAND USES				
Planned Developments	28	-	-	40%
Planned Area Developments	28	-	-	40%
Private Educational Facilities	28	-	-	40%
TND	28	-	-	40%
GU Interim*	9	-	60%	-



AU Agriculture (Residential Use)	9	-	60%	-
All Other Zoning Districts	28	-	60%	-
* Use dependent on character of neighborhood, otherwise EU-2 standards apply.				
** Unusual uses must comply with the requirements of underlying zoning district.				
In addition to the number of trees indicated in Table A, additional trees (street trees) may be required as provided in <u>Section 18A-6(C)</u> .				

- (6) Grassed areas that are to be used for organized sports such as football and soccer or other similar sports or playgrounds, that are clearly identified on a landscape plan shall not be counted toward calculating tree requirements.
- (7) Trees shall be planted to provide shade to residential structures of a height of thirty-five (35) feet or less. At least two (2) required lot trees shall be positioned in the energy conservation zone as defined herein. All exterior air conditioning units, except for air conditioning units placed on the roof, shall be shaded by trees and/or shrubs as referenced in the Landscape Manual.
- (8) Palms of a ten-foot minimum overall height or minimum caliper of three (3) inches at time of planting shall count as a required tree on the basis of two (2) palms-per tree, except as provided herein for palms used as of street trees. No more than thirty (30) percent of the minimum tree requirements may be met by palms.
- (9) Existing trees required by law to be preserved on site and that meet the requirements of Section 18A-6(C), may be counted toward fulfilling the minimum tree requirements.
- (10) Prohibited and controlled tree species shall not be counted toward fulfilling minimum tree requirements. Prohibited trees shall be removed from the site.
- (11) Of the required trees at least:
 - (a) Thirty (30) percent shall be native species; and

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- (b) Fifty (50) percent shall be low maintenance and drought tolerant; and
 - (c) No more than thirty (30) percent shall be palms.

- (12) Eighty (80) percent of the trees shall be listed in the Miami-Dade Landscape Manual, the Miami-Dade Street Tree Master Plan and/or the University of Florida's Low-Maintenance Landscape Plants for South Florida list.
- (13) In order to prevent adverse environmental impacts to existing native plant communities, cabbage palms (*Sabal palmetto*) that are harvested from the wild shall not be used to satisfy minimum landscaping requirements. Only existing cabbage palms, which are rescued from government approved donor sites, transplanted within the site, or commercially grown from seed shall be counted towards the minimum tree and native plant requirements.
- (14) When trees are planted within the right-of-way, the owners of land adjacent to the areas where street trees are planted must maintain those areas including the trees, plants and sod, using pruning methods specified in this Code. A covenant executed by those owners is required, or a special taxing district must be created to maintain these areas. Where the State, County or municipality determines that the planting of trees and other landscape material is not appropriate in the public right-of-way, they may require that said trees and landscape material be placed on private property.
- (15) Consideration shall be given to the selection of trees, plants and planting site to avoid serious problems such as clogged sewers, cracked sidewalks, and power service interruptions.
- (16) Municipalities shall meet all the above requirements in the corresponding zoning districts or land use categories of the particular municipality.

(D) *Shrubs.*

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- (1) All shrubs shall be a minimum of eighteen (18) inches in height when measured immediately after planting. Shrubs shall be provided at ratio of ten (10) per required tree. Of the provided shrubs at least:
 - (a) Thirty (30) percent shall be native species; and
 - (b) Fifty (50) percent shall be low maintenance and drought tolerant; and
 - (c) Eighty (80) percent shall be listed in the Miami-Dade Landscape Manual, the Miami-Dade Street Tree Master Plan and/or the University of Florida's Low-Maintenance Landscape Plants for South Florida list.
 - (2) When used as a visual screen, buffer, or hedge, shrubs shall be planted at a maximum average spacing of thirty (30) inches on center or if planted at a minimum height of thirty-six (36) inches, shall have a maximum average spacing of forty-eight (48) inches on center and shall be maintained so as to form a

continuous, unbroken and solid visual screen within one (1) year after time of planting. Shrubs used as a buffer, visual screen, or hedge need not be of the same species.

- (E) *Vines.* Vines shall be a minimum of twelve (12) inches in length immediately after planting and may be used in conjunction with fences, screens, or walls to meet physical barrier requirements as specified. Planting of perimeter walls with vines is recommended as a deterrent to painting of graffiti.
- (F) *Ground covers.* Ground cover plants used in lieu of grass, in whole or in part, shall be planted in such a manner as to present a finished appearance and reasonably complete coverage within one (1) year after planting.
- (G) *Mulch.*
 - (1) Mulches shall be applied and maintained in accordance with the most recent edition of the Florida Yards and Neighborhoods Handbook titled "A Guide to Florida Friendly Landscaping" by the University of Florida, Institute of Food and Agricultural Sciences (UF/IFAS) and available online at <http://www.floridayards.org/landscape/FYN-Handbook.pdf>.
 - (2) Cypress mulch shall not be used because its harvest degrades cypress wetlands.
- (H) *Buffers between dissimilar land uses.* Where dissimilar land uses exist on adjacent properties, and where such areas will not be entirely visually screened by an intervening building or structure from abutting property, that portion of such area not so screened shall be provided with a buffer consisting of a six (6) foot wall or fence with a life expectancy of at least ten (10) years, or shrubs which normally grow to a minimum height of six (6) feet. Where chain link fencing is used, shrubs shall also be required. Shrubs used as a buffer shall be a minimum of thirty (30) inches in height at time of planting, and shall be planted at a maximum average spacing of thirty-six (36) inches on center, or a minimum of thirty-six (36) inches in height at time of planting and planted at a maximum average spacing of forty-eight (48) inches on center. Said buffer shall form a continuous screen between the dissimilar land uses within one (1) year after planting. Buffers screening dissimilar uses shall include trees planted at a maximum average spacing of thirty-five (35) feet on center within a minimum five (5) foot landscaped strip.
- (I) *Parking lot buffers.* All parking lots adjacent to a right-of-way or private street shall be screened by a continuous planting and/or three (3) foot high wall with a seven (7) foot landscaped strip incorporating said planting and/or wall on private property. Planting material at time of planting shall be either a minimum height of eighteen (18) inches with a maximum average spacing of thirty (30) inches on center, or a minimum height of thirty-six (36) inches with a maximum average spacing of forty-eight (48) inches on center.

- (J) *Landscaped areas in parking lots.* Ten (10) square feet of landscaped area per parking space shall be provided within a parking lot. In order to maximize the distribution of shade, trees shall be planted throughout the interior of the parking lot at a minimum density of one (1) tree per eighty (80) square feet of landscaped area, exclusive of parking lot buffers. Planting areas for each tree shall have a minimum width of five (5) feet, exclusive of the curb dimension, and shall be planted or covered with other landscape materials. This requirement is in addition to any applicable required open space as provided in Chapter 33 of the Code of Miami-Dade County or applicable municipal code.
- (K) *Plant quality.*
- (1) Plants installed pursuant to this Code shall conform to, or exceed, the minimum standards for Florida Number One as provided in the most current edition of "Grades and Standards for Nursery Plants, Part I and II," prepared by the State of Florida Department of Agriculture and Consumer Services.
 - (2) Trees installed pursuant to this Code shall have one (1) primary vertical trunk and secondary branches free of included bark up to a height of six (6) feet above natural grade.
- (L) *Stormwater retention/detention areas.*
- (1) Stormwater retention/detention areas shall be designed to maximize the perimeter dimension, where feasible.
 - (2) Stormwater retention/detention areas shall be planted throughout with native herbaceous facultative plants, with the following exceptions:
 - (a) In areas that are designated and actively used for play and/or picnic areas, overflow parking, or sports shall be planted with grasses which are very drought tolerant, as referenced in the Landscape Manual, as well as tolerant to wet soils.
 - (b) In areas where the minimum required stormwater retention capacity would be adversely affected.
 - (3) The minimum required number of native herbaceous facultative plants shall be one (1) plant per square foot of retention/ detention area, including the slope. Minimum required herbaceous plant container size shall be one and one-half (1½) inches, commonly, referred to as a liner. Sprigging, seeding, plugging, hydro-mulching or sodding with native herbaceous facultative plants grown from local seed sources may be used in lieu of liners. Herbaceous plants shall be planted in such a manner as to present a finished appearance and reasonably complete coverage within one (1) year after planting.
 - (4) Native facultative trees or shrubs may be used in lieu of native herbaceous

facultative plants, provided that the minimum required stormwater retention capacity is not adversely affected.

(Ord. No. 95-222, § 2, 12-5-95; Ord. No. 97-90, § 1, 6-17-97; Ord. No. 98-13, § 1, 1-13-98; Ord. No. 09-35, § 4, 5-5-09)

Sec. 18A-7. - Landscape plan review criteria.

In the unincorporated area all landscape plans shall be reviewed by the Department of Planning and Zoning, and where existing trees or Natural Forest Communities or Environmentally Endangered Lands are involved, the Department of Environmental Resources Management. In the case of a municipality, landscape plans shall be approved by the department(s) or board(s) as deemed appropriate within the municipality. Landscape plans shall be reviewed in accordance with the following goals and objectives and the guidelines and illustrations provided in the Landscape Manual as well as the Guide to Florida-Friendly Landscaping provided by the Florida Yards and Neighborhoods Program:

- (A) Landscape design shall enhance architectural features; relate structure design to the site; visually screen dissimilar uses and unsightly views; reduce noise, glare and heat gain from paved areas, major roadways and incompatible uses; strengthen important vistas and reinforce neighboring site design and architecture.
- (B) Existing specimen trees, native vegetation (including canopy, understory, and ground cover) and Natural Forest Communities shall be preserved to the maximum extent possible and all requirements of Section 24-49 of the Code of Miami-Dade County shall be met. Preserved Natural Forest Community areas shall be deducted from the total area used to calculate minimum landscaping requirements. Native vegetation in these Natural Forest Community areas shall not be used to satisfy minimum landscape requirements.
- (C) In order to conserve water, reduce maintenance, and promote plant health, plant species shall be selected and installed based on their water needs, growth rate and size, and resource inputs. Plants with similar water needs shall be grouped in hydrozones. Adequate growth area, including rooting space, based on natural mature shape and size shall be provided for all plant materials.
- (D) The plan shall include the use of native plant species in order to reestablish an aesthetic regional quality and take advantage of the unique diversity and adaptability of native species to the environmental conditions of South Florida. Where feasible, the re-establishment of native habitats shall be incorporated into the landscape plan.
- (E) Trees and shrubs shall be planted in the energy conservation zone where feasible, in order to reduce energy consumption by shading buildings and shall be used to reduce heat island effects by shading paved surfaces.
- (F) Street trees shall be used to shade roadways and provide visual order. Where feasible,

selected species shall be used to establish a road hierarchy by defining different road types.

- (G) Special attention shall be given to the use of appropriate species located under, or adjacent to overhead power lines, and near native plant communities and near underground utility lines. Adequate growth area shall be provided for all plant materials.
- (H) Landscaping shall be designed in such a way as to provide safe and unobstructed views at intersections of roadways, driveways, recreational paths and sidewalks in accordance with Section 33-11 of the Code.
- (I) Historic landscapes and landscape features designated by local, State or federal governments shall be preserved.

(Ord. No. 95-222, § 2, 12-5-95; Ord. No. 98-13, § 1, 1-13-98; Ord. No. 98-125, § 36, 9-3-98; Ord. No. 09-35, § 5, 5-5-09)

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Key Colony Beach

Sec. 101-65. - Plant material standards.

(1) General standards. All plant materials shall conform to the standards for Florida No. 1, or better, as given in the current "Grade and Standards for Nursery Plants," State of Florida, Department of Agriculture, Tallahassee, or equal thereto.

(2) Native plants or xeriscape. At least fifty (50) per cent of all landscaped areas shall have plant materials included on the beautification committee's list of native or xeriscape species which is available at city hall.

(3) Tree specifications.

(a) Required trees shall be of a species which normally grow to a minimum height of twelve (12) feet and have a mature crown spread of not less than fifteen (15) feet with trunks which can be maintained with over six (6) feet of clear wood. The beautification committee shall maintain a list of acceptable trees. See section 101-67 for list of prohibited trees.

(b) All required trees shall have a minimum caliper or diameter at breast height (D.B.H.) of two and one-half (2½) inches and be a minimum of six (6) feet in height at time of planting.

(4) Other plant material specifications.

(a) Hedges: Hedges shall be planted and maintained so as to form a continuous, solid visual screen within one year of planting. Spacing of plants shall be no more than three (3) feet on center.

(b) Living ground cover: Shall be of a species which reaches a maximum height of not more than twelve (12) inches and may be used in lieu of grass. Living ground cover shall present a finished appearance and reasonably complete coverage at time of planting.

(c) Vines: May be used in conjunction with fences or walls to meet physical barrier requirements as specified.

(d) Lawn grass: Not more than twenty-five (25) per cent of a lot shall be covered with lawn grass requiring irrigation. Grass shall be a species normally grown as permanent lawns in Monroe County and may be sodded, plugged, sprigged or seeded, except that solid sod shall be used in areas subject to erosion. In areas where other than solid sod or grass is used, nursegrass seed shall be sown for immediate effect and protection until coverage is otherwise achieved.

(Ord. No. 299-1995, 12-28-95)



Village of Islamorada

Sec. 30-821. - Materials and installation criteria for required landscaping.

(a) The arrangement of plant material shall be determined by the developer consistent with this division, unless otherwise required in this chapter.

(b) Plant material shall be healthy and free of disease, and shall be installed with sufficient organic material to ensure survival.

(c) Plant species identified as a Category I or II invasive exotic species shall not be planted.

(d) Plants shall be of the following minimum sizes: Canopy trees shall have a minimum of three inches dbh or eight feet in height. Understory trees shall be a minimum of six feet in height. Shrubs shall be a minimum of three feet in height. The director of planning and development services may reduce the height requirement 50 percent for rare native plant species.

(e) Growth of plant material at maturity shall be considered prior to planting, where future conflicts such as views, signs, overhead and underground utilities, lighting, fire access, drainage and traffic circulation might arise.

(f) No one species of tree shall exceed 50 percent of the minimum number of trees required. Neither existing trees nor trees in excess of the minimum number required shall be subject to this limitation.

(g) Seventy-five percent of the plant material used to satisfy landscaping requirements shall be native species.

(h) All berms installed pursuant to this division or to retain stormwater shall be planted with ground cover, shrubs or sod. Berms provided to meet buffer provisions shall be planted with a continuous hedge.

(i) All canopy trees installed within six feet of public infrastructure shall utilize a root barrier system, as approved by the village operations director.

(j) Owners of properties that require a Class D or greater bufferyard shall file a bond with the director of planning and development services in the amount of ten percent of the value of the plant material. If the plant material survives one year the bond shall be returned to the owner.

(k) Spacing. Trees shall be installed in accordance with the following spacing requirements:

(1) Canopy trees shall be located a minimum of ten feet away from structures and 15 feet from other canopy trees.

(2) Understory trees shall be located a minimum of five feet away from structures, and ten feet from other trees.

(3) Palms shall be located a minimum of three feet from structures and three feet from other palms and ten feet from other trees.

(4) Trees and palms which are in excess of the minimum number required may be spaced closer to each other.

(5) Trees shall be planted no closer to an impervious area than half of the minimum size of the required planting area for the particular tree species (in accordance with item (7) below).

(6) Where a conflict in spacing or canopy spread occurs between required trees and existing offsite or onsite trees, the requirements of this section may be modified as determined by the director of planning.

(7) Each tree shall have pervious area surrounding it sufficient to support the species, as determined by the planning department. Minimum planting areas are as follows:

a. Canopy tree. Two hundred twenty-five square feet with 15 feet the smallest dimension, except when used in parking area peninsulas/islands.

b. Understory tree. Ninety square feet with eight feet the smallest dimension.

c. Small tree. Sixty-four square feet with eight feet the smallest dimension.

d. Single-stem palms with typical DBH at maturity of 12 inches or greater. Twenty-five square feet with five feet the smallest dimension.

e. Clustering palms/palms with typical DBH at maturity of less than 12 inches. Nine square feet with three feet the smallest dimension.

(l) Plant Materials.

(1) Quality. Plant materials used in accordance with the provisions of this section of the code shall conform to the standards for Florida Number One, or better, as provided for in the most current edition of "Grades and Standards for Nursery Plants," parts I and II, State of Florida Department of Agriculture and Consumer Services. Sod shall be clear and visibly free of weed, pests and diseases. Sod pieces shall be neatly mowed. Damage and breakage shall not occur when pieces are picked up by one end.

(2) Plant ball sizes. Ball sizes on all plant material shall conform to or exceed the minimum standards as noted in the most current edition of "American Standards for Nursery Stock," prepared by the American Association of Nurserymen.

(3) Use of site specific plant material. Plants used in the landscape design pursuant to this section of the code shall be to the greatest extent appropriate to the soil and other environmental conditions in which they are to be planted.

(4) Shrubs and hedges. When used as a hedge, shrubs shall be full to base, planted and maintained so as to form a continuous, unbroken solid, visible screen within a maximum of one year after time of planting.

(m) Finished grades of landscape areas. Finished grade of landscape areas shall be at or below the grade of adjacent VUA or public sidewalks, except for mounding or other surface aesthetics. Grade shall be designed to receive roof and surface runoff and to assist irrigation of plantings and then any overflow routed as necessary underground. Mounding or other surface aesthetics shall not inhibit or defeat intended rainwater capture, retention or percolation from a VUA.

(n) Stabilization. All trees and palms shall be securely guyed, braced, or staked at the time of planting until established. The use of nails, wire, rope, or other methods which damage the tree or palm are prohibited. Trees and palms that remain upright at the time of planting without the aid of stabilization materials are exempt from this requirement. All stabilization materials shall be removed after a maximum period of one year from the date of CO. All plants shall be installed with the top of the root ball even with the soil grade.

(Ord. No. 02-12, § 1(5.5.11), 1-24-2002; Ord. No. 19-16 , § 2, 6-27-2019; Ord. No. 19-17 , § 2, 8-8-2019)



Steven Hit, Landscape Planner for Indian River County

The County has a combination point system/species percentage of native/drought tolerant. It is fairly complicated.

The bottom line as it relates to percentage of landscape material. They require 75% native/drought tolerant and the 75% is related to the number of species. So in your species count if you have 12 different species, 8 of those species have to be native/drought tolerant. It is not related to number of plants.

8/20/2020

Key West, FL Comprehensive Plan

OBJECTIVE 6-1.7: - PROTECT NATIVE VEGETATION AND MARINE HABITATS.



The City shall continue to enforce Land Development Regulations designed to protect and retain major vegetative communities and marine habitats, including the beach and dune communities, the hardwood hammock community, tidal and freshwater wetlands, mangroves, near and offshore reefs, patch reefs, seagrasses, and other living marine resources.

Monitoring Measure: Acreage of protected vegetative communities and marine habitats.

Policy 6-1.7.1: - Implementing Protection of Vegetative Communities and Marine Habitats.

The City shall continue to enforce all adopted regulations which mandate restoration in order to compensate for loss of vegetation and to enhance stabilization of fragile slopes and/or shorelines impacted by development.

Policy 6-1.7.2: - Preservation of Native Plant Communities.

Preserve only

The City shall continue to enforce all adopted regulations which mandate that new development preserve, as a minimum, all wetlands and ninety (90) percent of hardwood hammocks. No development is permitted in wetlands, except where State and/or federal agencies having jurisdiction provide for development rights. Wetland protection regulations shall at a minimum be consistent with applicable State and federal regulatory policies affecting the specific sites.

Policy 6-1.7.3: - Removal of Undesirable Exotic Vegetation.

The City shall continue to enforce all adopted regulations which require that prior to the issuance of a certificate of occupancy for a new development, the owner/applicant shall remove all nuisance and invasive exotic vegetation from the site for which a development order or permit is requested. Invasive species lists should be referenced from the peer reviewed rankings by Florida Exotic Pest Plant Council and the Florida Keys Invasive Exotic Task Force.

Policy 6-1.7.4: - Protection of Manatee Habitats.

Although the City of Key West is not a prime area for manatee habitats, there have been sightings of manatees. The City shall continue to promote protection of manatee habitats in a manner consistent with guidelines of the State. For instance, the City shall continue to comply with the following State Guidelines:

1. The City of Key West shall assist Monroe County, the State, the U.S. Fish and Wildlife Service, and other State and federal agencies, in developing an area-specific manatee protection plan and marina sighting plan in order to ensure long-range manatee and habitat protection.

2. Construction and expansion of multislip docking facilities and boat ramps shall be directed to locations where there is quick access to deep, open water, where the associated increase in boat traffic will be outside the areas of high manatee concentration, and where wetlands supporting manatee habitat will not be disturbed.
3. Permit applications for all boating facilities, including single family docks and dry storage, shall be evaluated in the context of cumulative impacts on manatees and marine resources.
4. The City shall assist the State in distributing State publications and educational materials on coastal and marine resource conservation, and manatees in particular, to boaters, and assist the display of such materials.
5. Slow or idle speed zones shall be adopted, with or without channel exemptions as appropriate, in areas frequented by manatees. Enforcement of speed zones should be improved.
6. The City shall assist the State in protecting manatees from injury and disturbance resulting from aquatic commercial and recreational activities.
7. Manatee food requirements shall be taken into account in all aquatic plant management activities where manatees may occur.
8. The City shall assist the State in ensuring the protection of habitat of special significance to manatees.

Policy 6-1.7.5: - Increase of Native Plant Communities.

The City shall increase use of native plants by creating an Urban Beautification Plan which calls for increased canopy cover, and highlights the use of natives, and flowering non-natives in discrete entry and accent locations.

Monitoring Measure: Achievement of stormwater drainage Level of Service Standard.

3

X

Miami

https://library.municode.com/fl/miami/codes/code_of_ordinances?nodeId=PTIITHCO_CH17ENPR

(Code language regarding tree permits.)

<https://codehub.gridics.com/us/fl/miami#/f4f0c8a1-19f6-44ee-81d0-26313c743ca0>

Prescribes a required number of trees (and defines what qualifies as a tree).

Eighty (80) percent of the trees shall be listed in the Miami-Dade Landscape Manual, the Miami-Dade Street Tree Master Plan and/or the University of Florida's Low-Maintenance Landscape Plants for South Florida list.

Pasco County

POLICY CON 1.8.2: - LANDSCAPING WITH NATIVE PLANT SPECIES

[SHARE LINK TO SECTIONPRINT SECTIONDOWNLOAD \(DOCX\) OF SECTIONEMAIL SECTIONCOMPARE VERSIONS](#)

Pasco County shall continue to require the use Of native plant species or non-native species proven to be noninvasive in the landscaping of new development projects and additions to existing projects.

POLICY CON 1.8.3: - PUBLIC EDUCATION

[SHARE LINK TO SECTIONPRINT SECTIONDOWNLOAD \(DOCX\) OF SECTIONEMAIL SECTIONCOMPARE VERSIONS](#)

Pasco County shall maintain and distribute a recommended native plant listing and other educational materials to increase public awareness of the need to utilize native plant species in the developed landscape.

POLICY CON 1.8.5: - DEFINITION OF "NATIVE PLANTS"

[SHARE LINK TO SECTIONPRINT SECTIONDOWNLOAD \(DOCX\) OF SECTIONEMAIL SECTIONCOMPARE VERSIONS](#)

Pasco County shall utilize the University of South Florida Institute of Systematic Botany definition of "native plants" to include only those species present in Florida prior to European influences, including the earliest explorers such as Ponce de Leon.

Greenspace Requirements and Standards (link to 21 page document strictly referencing landscaping standards)

https://library.municode.com/fl/pasco_county/codes/land_development_code?nodeId=112-ldc%20905.2%20landscapingbuffering

Saint Lucie County



For required landscaping all proposed trees must be native (or listed as waterwise under the waterwise section of our code). A minimum of 25 percent of the required hedge material must also be native.

https://library.municode.com/fl/st. lucie county/codes/land_development_code?nodeId=CHVIIIDEDEI_MST_7.09.00LASC_7.09.03GEPR

West Palm Beach

<http://online.encodeplus.com/regs/westpalmbeach-fl/doc-viewer.aspx?secid=701#secid-701>

- a. *General standards.* All open space, as required by this chapter, shall be landscaped as provided in this section.
 1. *Landscaping generally.* All open space, excluding vehicular and pedestrian circulation features and surface parking, shall be covered with natural grass, ground cover, shrubbery, or other suitable plant material, or may have paved active recreation areas, patios, terraces, pedestrian circulation areas, swimming pools, water features, and similar site components incorporated in the open space designs. Artificial turf shall only be permitted and installed in accordance with the standards of section 94-451.
 2. *General landscaping standards for single-family dwelling units and all other developments.* General landscaping standards for single-family dwelling units and all other developments shall be as follows:
 - a. *Single-family dwelling units.* For single-family and duplex dwelling units, at least one shade or flowering tree shall be planted for each 1,000 square feet of open space or portion thereof. At least one shrub shall be planted for each 500 square feet of open space or portion thereof. Front yards shall be landscaped to meet the requirements of section 94-482(a).
 - b. *All other developments.* The general landscaping standards for all other developments shall be as follows:
 1. *Trees.* At least one shade tree shall be planted for each 1,500 square feet of required open space or portion thereof. At least one flowering tree shall be planted for each 6,000 square feet of required open space or portion thereof. Required trees may be planted at uniform intervals, at random, or in groupings. The calculation of trees for this provision may include those required for buffering, screening, or to improve aesthetics within the site.
 2. *Shrubs.* At least one shrub shall be planted for each 500 square feet of required open space or portion thereof.
 3. *Natural grass.* Grass areas shall not exceed 60 percent of the required landscape area.
 3. *Amount of plant material required.* The total open space area required shall determine the number of trees and shrubs to be planted. Required open space is established by each zoning district's regulations set forth in this Code. The total amount of plant material required shall not be affected by that portion of the open space area devoted to active recreation purposes, patios, terraces, pedestrian circulation, and similar amenities.
- b. *Substitution of palm trees.* Palm trees may be substituted for not more than 35 percent of the shade or flowering trees required by this article. However, when palm trees are substituted for shade trees, three palm trees shall be provided for each required shade tree. This 3:1 substitution shall not be required for



Royal Palm Trees (*Roystonea* spp.), Senegal Date Palm (*Phoenix reclinata*), Medjool Date Palm (*Phoenix dactylifera*), Bismarck Palm (*Bismarckia nobilis*), and Silver Date Palm (*Phoenix sylvestris*).

- c. *Landscaping of public rights-of-way.* Public rights-of-way between street or sidewalk surfaces or private areas that serve as an extension of public space shall be planted with groundcover approved by the city or natural grass per the requirements of section 94-445(4)(c). Grass areas shall be sodded. The planting of trees and shrubs within public rights-of-way is subject to the approval of the city.
- d. *Clear vision requirements.* Landscaping shall be installed in accordance with the clear vision requirements of subsection 94-305(e).
- e. *Florida-friendly landscape requirements.* All new developments except for those exempt pursuant to subsection 94-441(c) shall be required to apply certain Florida-friendly landscape techniques for landscaping prior to receiving a certificate of occupancy. The adopted design options and the accompanying points used to meet the Florida-friendly landscape requirements shall be clearly tabulated on the landscape plan. Such a landscape plan must satisfy a minimum total of 25 points for a single-family dwelling unit and a minimum of 50 points for all other developments from the following list of options. Plants may only be counted once for credit toward drought tolerant or Florida native plant points.

Points

8/20/2020

Lee County, FL Land Development Code

3

DIVISION 6. - OPEN SPACE, BUFFERING AND LANDSCAPING

*Footnotes:**--- (7) ---*

Cross reference— *Environment and natural resources, ch. 14; tree protection, § 14-371 et seq.; zoning regulations pertaining to environmentally sensitive areas, § 34-1571 et seq.*

Sec. 10-411. - Title and citation.

This division will be known and cited as the "Lee County Landscape Code."

(Ord. No. 98-28, § 2, 12-8-98)

Sec. 10-412. - Purpose and intent.

The purpose and intent of the landscape code is to:

- (1) Promote the health, safety, and welfare of residents of Lee County by establishing minimum uniform standards for the installation and maintenance of landscaping;
- (2) Improve the aesthetic appearance of commercial, industrial, and residential developments through the requirement of minimum open space and landscaping in ways that compliment the natural and built environment;
- (3) Promote preservation and planting of native plants and native plant communities;
- (4) Provide benefits to persons through open space and landscaping by reducing noise and glare;
- (5) Improve environmental quality by reducing and reversing air, noise, heat, and chemical pollution through the preservation of native vegetation, relocation of native trees and installation of landscaping; and
- (6) Promote water conservation and xeriscape principals by requiring the use of native plants, organic mulch, reduction of turf areas, and appropriate irrigation.

(Ord. No. 92-44, § 13(A), 10-14-92; Ord. No. 94-28, § 20, 10-19-94; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 17-11, § 1, 9-5-17)

Sec. 10-413. - Definitions.

The following words, terms and phrases, when used in this division, will have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Open space. Open space means:

- (1) Areas of preserved indigenous native vegetation and areas replanted with vegetation after construction, such as natural systems, lawns, landscaped areas and greenways, which comply with the minimum dimensional requirements of section 10-415(d).
- (2) The outdoor recreational facilities as listed in section 10-415(d)(2)d.
- (3) That portion of bodies of water, existing or proposed, that are within the proposed development area and subject to the restrictions and limitations in section 10-415(d)(2)c.
- (4) Archaeological sites, including any area that contains evidence of past human activity ranging from large mound and midden complexes to a group of artifacts, the boundary and extent of which is determined by a survey by a professional archaeologist.
- (5) Plazas, atriums, courtyards and other similar public spaces as specified in section 10-415(d)(2)d.

Parking areas means all areas, paved or unpaved, designed, used or intended to be used for the parking or display of vehicles, excluding:

- (1) Areas used for parking or vehicle display that are under or within buildings;
- (2) Parking areas serving a single structure of two dwelling units or less; and
- (3) Areas used for the temporary storage of construction equipment.

Vehicle use area means all ground level impervious surfaces, including impervious parking areas, that may be used by vehicles for parking, circulation, and similar activities within the development. Street right-of-way, roadway easement, and those areas excluded from the definition of parking area are exempted.

(Ord. No. 92-44, § 13(B), 10-14-92; Ord. No. 94-28, § 21, 10-19-94; Ord. No. 98-28, § 2, 12-8-98)

Sec. 10-414. - Submittal requirements.

- (a) *Landscape plan required.* Prior to the approval of a development order, an applicant whose development is covered by the requirements of this section must submit a landscape plan. The landscape plan must be prepared by and bear the seal of a landscape architect registered in the State of Florida. The plan must include the narrative and calculations to ensure that the proposed landscaping will be in compliance with requirements of this Code. However, small developments may qualify for a hardship waiver if the cost of compliance with the landscape architect requirement is disproportionate to the cost of the entire development. This waiver is subject to the sole discretion of the Director.

The landscape plan must be drawn at the same scale as the development order plans and include, at a minimum, the following items where applicable:

LANDSCAPE PLAN REQUIREMENTS	
Title of project including project owner's name	Preserved trees and palms
Preparer's name	Trees and palms to be relocated
Dimensions and North arrow	Construction vegetation protection barricades
All open space	Permanent vegetation protection techniques
Indigenous open space	Tree and palm staking detail
All landscape areas	Mulch details
Highlight all Code required landscaping	Safe sight distance triangles
Vehicle use areas - parking, aisle, driveways	Locations of proposed and existing parking lot lighting
Roadways and access points existing and proposed	Locations of proposed signs and existing signs to remain

8/20/2020

Lee County, FL Land Development Code

Overhead and underground utilities existing and proposed	All easements existing and proposed
Indigenous Vegetation Management Plan	Reference chart that includes: Graphic plant symbols Plants botanical and common name plant quantity, height, trunk caliper and spread Plant spacing and native status

(b) *Irrigation plan required.* Prior to the approval of a development order, an applicant whose development is covered by the requirements of this section must submit an irrigation plan. This requirement can be met by the addition of notes or drawings on the landscape plan sheet of the development order. The irrigation plan requirement does not apply to single-family residential lots created by a development order. The conceptual irrigation plan must, at a minimum, indicate:

- (1) The type of automated irrigation system proposed.
- (2) All landscape areas, including parking lot islands, will be adequately sleeved for irrigation. This requirement must be included on the grading/paving plan sheet.
- (3) A moisture (rain) sensor will be included in the irrigation system and located on the site so that it will receive direct rainfall, not impeded by other objects.
- (4) The irrigation system will be designed to eliminate the application of water to impervious areas, including roads, drives and other vehicle use areas.
- (5) The irrigation system will be designed to avoid impacts on existing native vegetation that will be retained on the development site.

(c) *Tree location plan.* A tree location plan must be submitted when general trees located within a designated preserve are being claimed for credit. The tree location plan must include specific information about all trees that are being preserved for credit within the entire development footprint. The tree location plan must: (1) be at the same scale as the site plan; (2) show the location of trees to be saved; (3) state the caliper for each tree (four-inch minimum caliper measured at four and one-half feet above ground level); and (4) identify the species of each tree.

(Ord. No. 98-28, § 2, 12-8-98; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 09-23, § 4, 6-23-09; Ord. No. 11-08, § 4, 8-9-11; Ord. No. 16-19, § 3, 11-15-16)

Sec. 10-415. - Open space.

(a) *Open space calculations.* All development must contain the minimum percentage of open space as outlined in the following table below:

OPEN SPACE REQUIREMENT	
Type of Development	Open Space as % of Development Area

	Small Developments ⁽¹⁾	Large Developments ⁽¹⁾
<i>Residential:</i> Type of dwelling units as defined in <u>section 34-2</u> located in conventional zoning districts with conventional zoning district lot coverage.		
Single-family residence or mobile home on a single lot with a minimum lot size of 6,500 sq. ft.	None	None
Duplex on a single lot with a minimum lot size of 7,500 sq. ft.	None	None
Two-family attached each on an individual lot with a minimum lot size of 3,750 sq. ft. per unit	None	None
All other residential ⁽²⁾	35%	40%
<i>Industrial</i> ⁽²⁾	10%	20%
<i>Other:</i> All other uses including, but not limited to commercial, places of worship, recreational vehicle parks, community facilities, schools (excluding Lee County School District), etc. ⁽²⁾	20%	30%
<i>Note:</i> Multiple use sites with conventional zoning must comply with each corresponding use percentage in this table.		
<i>Planned Development Zoning:</i> Planned developments must provide open space as required in <u>chapter 34</u> and per the approved master concept plan and resolution. Consistency with the master concept plan is in addition to the requirements of this provision, unless deviations have been granted.		

(b) *Indigenous native vegetation and trees.*(1) *Preservation.*

- a. Large developments, with existing indigenous native vegetation communities must provide 50 percent of their open space percentage requirement through the onsite preservation of existing native vegetation communities. Refer to section 10-701 for major indigenous plant communities of the County and section 10-1 for the definition of indigenous open space.
- b. If the development area does not contain existing indigenous native vegetation communities, but does contain existing indigenous native trees, then 50 percent of their open space percentage requirement must be met through the onsite preservation of existing native trees consistent with subsections 1 through 4 below. Refer to Appendix E and section 34-373(6)(g).
 1. Preservation of indigenous tree clusters is preferred over individual tree protection. Reasonable efforts to retain individual trees must be made. It is recognized that site design requirements (e.g.

8/20/2020

Lee County, FL Land Development Code

fill) may limit the ability to retain some individual trees, and in that case the County will allow the removal of those trees.

2. Sabal palms may be relocated in a horticulturally correct manner and clustered within open space areas.
3. Native trees (four to 15-inch caliper dbh) may be relocated to open space areas when proper horticultural methods (e.g. root pruning; use of antitranspirants) are utilized to insure the survivability of the trees, and a vegetation removal permit is obtained.
4. Developments greater than five acres in size that abut an arterial or collector road and have existing native trees within 50-feet of the right-of-way must be designed to provide a 50-foot right-of-way buffer for tree preservation. Drainage or utility easements located within or adjacent to the 50-foot right-of-way buffer area must be established in the location with the least amount of trees as determined by onsite inspection by Lee County. The preservation of the existing trees will not require a double hedge row to be installed as part of the right-of-way buffer. The preserve area may not be utilized for drainage or other similar uses that may adversely affect the existing native trees. To increase long-term survival of the existing trees to be retained, appropriate arboricultural techniques to reduce impacts to the existing trees must be used. Those techniques must include ways to reduce impacts to the trees' root systems and crowns during construction and must be clearly provided on the landscape plans of the development order. The native tree preservation right-of-way buffer may be used toward meeting the indigenous preservation requirement.

Applications submitted pursuant to this section encompassing difficult sites, such as irregularly shaped parcels or indigenous areas, may demonstrate that the intent of this section can be more effectively accomplished through an alternative right-of-way buffer design. Approval of an alternative design is at the discretion of the Director or designee.

- c. A minimum setback of 20 feet from buildings is required. For indigenous plant communities subject to fire, such as pine flatwoods, palmetto prairie and xeric scrub, a 30-foot setback is required for fire protection.

- (2) *Salvaging existing native plants.* Open space areas must be designed to incorporate as many of the existing large native trees and sabal palms as possible. Salvaged native plants relocated to an indigenous preserve must be provided with a temporary above ground irrigation system or other means of irrigation to ensure survivability.

Healthy native trees with a minimum caliper of four inches at four and one-half feet above the ground (dbh) may be relocated onsite for five tree credits toward general tree requirements. The trees must be properly prepared for relocation through root pruning or other horticulturally correct methods.

- (3) *Credits.*

- a. For all developments with required open space, except single-family subdivisions with individual lot area of 6,500 square feet or greater and a maximum lot coverage of 45 percent, an incentive to preserve indigenous native upland plant communities or indigenous native trees in large tracts, a scaled open space credit for single contiguous preserve areas will be granted as follows:

INDIGENOUS PLANT COMMUNITY & NATIVE TREE PRESERVATION AREA CREDITS		
Credit Provided	Minimum Size	Minimum Width

110%	½ acre	50 feet
125%	1 acre	75 feet
150%	3 acre	100 feet



- b. An additional, maximum ten percent credit will be granted if any of the following are included:
 1. Rare and unique uplands as defined by the Lee Plan.
 2. Connection to offsite public or private environmental conservation or preserve areas.
 3. Upland buffers to natural waterbodies.
 4. Preservation adjacent to a roadway.
 5. Restoration of native shrubs, grasses, and/or groundcover plants with the native tree preservation area. A minimum planting size of one gallon plant, installed on three foot centers (three-foot o.c.).
- (4) *Maintenance.* A plan must be submitted for the long term maintenance of vegetation in indigenous open space areas. This indigenous vegetation management plan must include the following criteria:
 - a. Method and frequency of pruning and trimming.
 - b. Methods to remove and control all exotic and nuisance plants in perpetuity.
 - c. Debris removal.
 - d. Protected species management plan conditions.
 - e. Drafts of educational materials (signage and brochures) to be provided to the residents about the purpose and function of these areas.
 - f. Written monitoring reports, including photos, that document preserve area conditions must be submitted prior to development order approval; and, again following construction completion but prior to issuance of a certificate of compliance (CC). The monitoring report submitted following construction completion must describe and document ecological restoration activity that has occurred in the preserve areas. If review of the monitoring reports reveals death or significant decline to preserve vegetation, then revision of the management plan and restoration in accord with section 10-423 will be required.
- (5) *Administrative deviation.* Consistent with the provisions of section 10-104, the Director may permit administrative deviations to reduce the minimum **50 percent indigenous native vegetation requirement** within this subsection to a lower percentage. Existing, approved indigenous preserve areas within planned developments are not eligible for administrative deviations, unless the preserve areas are interior to the project (100 feet or more from the property line). The administrative deviation request must include the unique conditions or circumstances that make the property unusable and unreasonably burdensome, and demonstrate why granting the deviation is in the public interest. The applicant must provide details of other actions that will be taken to offset the reduction (mitigation). Mitigation that will be considered includes, but is not limited to:
 - a. Onsite ecological creation/restoration, with long-term management. A minimum two to one ratio of creation/restoration area to indigenous area to be mitigated.
 - b. Offsite land acquisition with perpetual conservation protection. A minimum three to one ratio of acquired land to indigenous area to be mitigated.
 - c. Offsite ecological restoration on public lands or protected private lands. A minimum three to one ratio of

8/20/2020

Lee County, FL Land Development Code

acquired land to indigenous area to be mitigated.

- d. Purchase of appropriate credits from a permitted mitigation bank.
- e. A minimum three to one ratio of acquired land to indigenous area to be mitigated. Indigenous preservation area credits listed in section 10-415(b)(3)a. do not apply to onsite ecological creation/restoration areas or offsite areas.

(c) *Minimum dimensions.*

- (1) The minimum average width of open space areas must be ten feet.
- (2) The minimum area of open space must be 180 square feet.
- (3) For developments less than ten acres in size, indigenous open space areas must have a minimum average width of 20 feet and minimum area of 400 square feet.
For developments greater than ten acres in size, indigenous open space areas must have a minimum average width of 40 feet and minimum area of 1,500 square feet.
- (4) Open space preservation areas must be designed with adequate widths to preserve and allow the continued growth and viability of existing native trees.
- (5) Native tree preservation areas must extend to the full drip line of slash pine, three quarter drip line for all canopy type trees, and six feet from the trunk of any native palm, or other protective means, such as retaining walls, must be provided. Except for work related to approved ecological restoration activities, no filling, grading or excavating is allowed in open space preservation areas.
- (6) Surface water management systems may overlap with native tree preservation areas only where it can be clearly demonstrated that the effects of water management system construction or operation will not cause death or harm to the preserve tree and indigenous plant community of protected species.

(d) *Use of open space.*

- (1) Open space areas must be landscaped in accordance with this division.
- (2) The following uses may contribute to the open space requirements provided the minimum dimensions are met:
 - a. Buffers and landscaped areas in off-street parking areas, except for areas reserved for future parking spaces pursuant to section 34-2017(d);
 - b. Dry detention areas.
 - c. Existing or proposed bodies of water, including stormwater management areas and areas subject to saltwater inundation, which may be used to offset up to a maximum of 25 percent of the required open space area.
 - d. Active and passive recreation areas such as playgrounds, golf courses, beach frontage, nature trails, bikeways, pedestrian ways, tennis courts, swimming pools and other similar open spaces, as long as not more than 20 percent of the recreational area credited as open space consists of impervious surface.
 - e. Outdoor active and passive public use areas such as plazas, atriums, courtyards and other similar public spaces, which may be used to offset up to a maximum of 20 percent of the required open space.
 - f. Archaeological sites or zones that are designated as significant historic resources pursuant to chapter 22.
 - g. Removal of native vegetation from indigenous open space areas by mechanical or chemical means is prohibited unless specified by the indigenous vegetation management plan.

(Ord. No. 92-44, § 13(C), 10-14-92; Ord. No. 94-28, § 22, 10-19-94; Ord. No. 95-07, § 8, 5-17-95; Ord. No. 95-12, § 5, 7-12-95; Ord. No. 97-10, § 3, 6-10-97; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 02-20, § 3, 6-25-02; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 07-24, § 3, 8-14-07; Ord. No. 09-23, § 4, 6-23-09; Ord. No. 10-25, § 2, 6-8-10; Ord. No. 13-10, § 3, 5-28-13; Ord. No. 16-09, § 2, 4-5-16; Ord. No. 16-19, § 3, 11-15-16; Ord. No. 17-11, § 1, 9-5-17)

Sec. 10-416. - Landscape standards.

- (a) *General trees.* Landscaping for all new developments, except community and regional parks as defined in the Lee Plan, must include, at a minimum, the following number of trees, in addition to the landscaping required for parking and vehicle use areas and buffers. General tree requirements may be reduced through the utilization of larger trees as specified in section 10-420(c)(2) or through the use of planted detention areas as specified in section 10-416(a)(5). Existing water bodies within the development area will not be included in the calculation for general tree requirements.
- (1) Residential developments including recreational vehicle developments. One tree must be provided per 3,000 square feet of development area. The preferred location to install these trees is on common property (clubhouse, lakes, dry detention or other similar property) prior to the issuance of a certificate of completion. Tree credits should be utilized per section 10-420(j) for indigenous preserves, where applicable following the guidelines set forth in LDC section 10-414(c).
 - (2) Single-family developments with a conventional zoning district lot and lot coverage with minimum lot sizes of 6,500 square feet or greater. Single-family developments with a conventional zoning district lot and lot coverage with minimum lot sizes of 6,500 square feet or greater will be required to provide a minimum of two trees per lot.
 - (3) All other developments. One tree must be provided per each 3,500 square feet of development area.
 - (4) Heritage trees. For large developments, effort must be made to preserve native heritage trees with at least a 20-inch caliper dbh. Preserved heritage trees may be counted at a 5:1 credit ratio towards the general tree requirement. If a heritage tree must be removed from a site then a replacement native canopy tree with a minimum 20-foot height must be planted within an appropriate open space area. The replacement tree can only be counted at a 1:1 ratio towards meeting the general tree requirement.
 - (5) For each 400 square feet of dry detention or drainage area planted with appropriate native herbaceous vegetation (minimum one-gallon container size planted three-foot on center) and mulched with pine straw, the general tree requirement may be reduced by one ten-foot tree.
- (b) *Building perimeter plantings.* All new development in commercial zoning districts and commercial components of planned development districts and DRIs must provide building perimeter plantings equal to ten percent of the proposed building gross ground level floor area. These planting areas must be located abutting three sides of the building with emphasis on the sides most visible to the public, not including the loading area.

The perimeter planting areas must consist of landscape areas, raised planters or planter boxes that are a minimum of five feet wide. These landscape areas must include shrubs and ground cover plants with a minimum of 50 percent coverage of the landscape area at the time of planting. Trees and shrubs must meet the size requirements of section 10-420(d). Groundcover plants must be a minimum one-gallon container size. General trees may be planted within the building perimeter planting areas, especially effective are clusters (three or more) of sabal palms. Turfgrass is discouraged and is limited to ten percent of the landscape area. Water management areas may not be a part of this five-foot planting area. Pedestrian access ways may cross and loading areas may be placed in the perimeter planting area, but may not be used to meet minimum planting area or open space requirements.

An enlarged perimeter landscape area is required in the front of shopping centers and freestanding retail uses that constitute a large development. An area that is at least five percent of the size of the vehicular use area must be developed as green space within the front of shopping centers and retail establishments and be an enlargement to the front building perimeter planting area. However, it is not a requirement that this area directly abut the front of the building. The enlarged perimeter planting areas must consist of landscape areas, raised planters or planter boxes that are a minimum of five feet wide. These enlarged perimeter planting areas must include trees, shrubs and ground cover plants with a minimum of four trees per 100 linear foot of building and 50 percent coverage of the landscape area at the time of planting. The trees placed around the building will be applied to the

general tree requirement. Trees may be installed in clusters and do not need to be located within a 100 linear foot segment. Clusters of trees at the corners of buildings or framing entrances are especially effective. Trees and shrubs must meet the size requirements of section 10-420(d). Groundcover plants must be a minimum one-gallon container size. Taller palms (16- to 20-foot clear trunk) must be used when building height is greater than 35 feet. Turfgrass is discouraged and is limited to ten percent of the landscape area. Water management areas may not be a part of this enlarged planting area.

This five percent green space area may be used to meet open space requirements if they are in compliance with section 10-415(c), but may not be used to reduce the perimeter planting areas on the sides and rear of the building. These areas must be designed for scenic, noncommercial recreation purposes and be pedestrian-friendly and aesthetically appealing. They may include the following: limited turfgrass, mulch, decorative plantings, landscape, walkways within the interior of the green space area not used for shopping, fountains, manmade watercourses (but not water retention areas), park benches, site lighting, sculptures, gazebos, and any other similar items.

- (c) *Landscaping of parking and vehicle use areas.* The provisions of this section apply to all new off-street parking or other vehicular use areas. Existing landscaping that does not comply with the provisions of this Code must be brought into conformity, to the maximum extent possible, when: the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure has been vacant for a period of one year or more and a request for an occupational license to resume business is made. Consistent with the provisions of section 10-104, the Director may permit administrative deviations where a conflict exists between the application of this division and the requirements for the number of off-street parking spaces or area of off-street loading facilities.
 - (1) *Vehicular overhang of landscape areas.* The front of a vehicle may overhang any landscaped area a maximum of two feet, provided the landscaped area is protected by motor vehicle wheel stops or curbing. Two feet of such landscaped area or walkway may be part of the required depth of each abutting parking space. Walkways must be designed with a minimum of five feet width that is clear of any vehicle overhang.
 - (2) *Internal landscaping.* All parking areas must be internally landscaped to provide visual relief and cooling effects and to channelize and define logical areas for pedestrian and vehicular circulation, as follows:
 - a. Trees must be planted or retained in landscaped areas in parking areas, including landscaped areas reserved for future parking spaces, to provide for canopy coverage when the trees mature. At least one canopy tree or a cluster of three sabal palms must be planted or retained for every 250 square feet of required internal planting area, and no parking space may be more than 200 feet from a tree planted in a permeable island, peninsula or median. Canopy tree requirements may be met with existing indigenous native trees on a 1:1 ratio whenever such trees are located within the parking area.
 - b. Landscaped areas on the parking area perimeter or internal islands must equal or exceed a minimum of ten percent of the total paved surface area. Landscaped areas reserved for future parking spaces pursuant to section 34-2017(d) may not be included in this calculation.
 - c. The minimum dimension of any required internal landscaped area must be ten feet for projects less than ten acres and 18 feet for projects ten acres or larger.
 - d. No more than an average of ten parking spaces must occur in an uninterrupted row with a maximum of 13 parking spaces between landscape areas when ten-foot wide landscape islands are used unless optional divider medians, as specified in section 10-416(c)(2)f., are used.
 No more than 20 parking spaces must occur in an uninterrupted row when 18 foot wide landscape islands are used unless optional divider medians, as specified in subsection (c)(2)f. of this section, are used.
 - e. For large developments only, each row of parking spaces must be terminated by landscaped islands that measure not less than five feet in width and not less than 18 feet in length. Curbing is strongly

encouraged. If terminal islands are used for required canopy trees, they must be a minimum of ten feet in width.

- f. Optional divider medians may be used to meet interior landscape requirements. If divider medians are used, they must form a landscaped strip between abutting rows of parking spaces. The minimum width of a divider median must be 18 feet. One tree must be planted for each 40 linear feet of divider or fraction thereof. Trees in a divider median may be planted singly or in clusters. The maximum spacing of trees must be 60 feet.
 - g. All interior landscaped areas not dedicated to trees or to preservation of existing vegetation must be landscaped with grass, ground cover, shrubs or other approved landscaping materials, and this must be so noted on the landscape plans. Sand, gravel, rock, shell or pavement are not appropriate landscape materials.
- (d) *Buffering adjacent property.* Buffering and screening applies to all new development. Existing landscapes that do not comply with the provisions of this section must be brought into conformity to the maximum extent possible when: the vehicular use area is altered or expanded, except for restriping of lots/drives, the building square footage is increased, or there has been a discontinuance of use for a period of one year or more and a request for an occupational license to resume business is made.
- (1) *General.* A buffering area is required along the entire perimeter of the proposed development whenever the proposed development abuts a different use. The existing use or, where vacant, the permitted use, of the abutting property will determine the type of buffering area required for the proposed development. Buffer areas may not be located on any portion of an existing or dedicated street right-of-way or roadway easement except that buffers may be located within slope easements as long as appropriate planting soil is provided in the slope.
 - (2) *Use categories.* In interpreting and applying the provisions of this section, development is classified into the following use categories:

USES	
AG	Agricultural uses
SF-R	Single-family, duplex or two-family attached situated on individual lots
MF-R	Residential structures containing three or more dwelling units on a single parcel
COM	Commercial uses, public facilities, schools (other than Lee County School District), and recreational vehicle parks
WOR	Places of worship (df)
IND	Industrial use
STP	Sewer treatment plant or water treatment plant
ROW	Street right-of-way or roadway easement.
REC	Public active recreational park

PRE	Public preserve lands for conservation and/or passive recreation
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- (3) *Buffer requirements.* The following table provides the required buffer type when a proposed use is abutting an existing use or, in the absence of an existing use, the existing zoning.

BUFFER REQUIREMENTS										
Permitted or Existing Uses										
Proposed Uses	AG	SF-R	MF-R	CO	WOR	IND	STP	ROW	REC	PRE
AG	---	---	---	---	---	---	---	---	---	---
SF	---	---	---	---	---	---	---	---	B	F(2)
MF	---	B	---	---	---	---	---	D	B	F(2)
CO	---	C/F	C/F	A	A	---	---	D	A	F(2)
WO	---	C/F	C/F	A	A	---	---	D	A	F(2)
IND	---	(1)	(1)	---	(1)	---	---	D	A	F(2)
STP	C/F	E	E	E	E	C/F	---	D	A	F(2)
REC	---	C/F	C/F	A	A	---	---	D	F	F(2)
PRE	---	F	F	---	---	---	---	---	F	---

Notes for Buffer Requirements Table:

- All uses or activities must provide a type E buffer unless the Director determines that the proposed use or activity will not have an adverse impact on adjacent property. If the Director determines that a type E buffer is not required, a type F buffer must be constructed.
 - The required buffer landscaping must be 100 percent native.
 - Reserved.
- (4) *Buffer types.* The following table provides six different buffer types. Each type buffer, identified by a letter, provides the minimum number of trees and shrubs per 100 linear foot segment and indicates whether or not a wall or hedge is required.

BUFFER TYPES (per 100 linear feet)

Buffer types	A	B	C	D(3)	E	F
Minimum width in feet	5	15	15	15	25	30
Minimum # of trees	4	5	5	5	5	10
Minimum # of shrubs	—	Hedge(2)	18(4)	Hedge(2)	30(4)	Hedge(2)
Wall required (1)	No	No	Yes	No	Yes	No

Notes for Buffer Types Table:

1. A solid wall, berm or wall and berm combination, not less than eight feet in height as measured from the finished grade of the project site. All trees and shrubs required in the buffer must be placed on the residential side of the wall. Walls must be constructed to ensure that historic flow patterns are accommodated and all stormwater from the site is directed to on-site detention/retention areas in accordance with the SFWMD requirements.
2. Hedges must be planted in double staggered rows and be maintained so as to form a 36-inch high (F type buffers must be 48 inches at installation and be maintained at 60 inches high) continuous visual screen within one year after time of planting.
3. Trees within the ROW buffer must be appropriately sized in mature form so that conflicts with overhead utilities, lighting and signs are avoided. Palms are limited to a maximum of 50 percent of the ROW tree requirement. Palms must be clustered and cannot be planted in a "soldiering" effect, where they are equal distance and in a single row. South Florida slash pine (*Pinus elliotii* var. *densa*) and Longleaf pine (*Pinus palustris*) trees are encouraged for use in the ROW buffers due to their high crown, which provides tree canopy while maintaining good visibility to the development site.
4. Shrubs required by this section are intended to provide visual screening and may not be pruned to reduce height.
- (5) Public and quasi-public facilities, including, but not limited to, places of worship, parks, utility facilities, government offices, neighborhood recreational facilities and private schools must provide a type C buffer if, in the opinion of the Director, the proposed development will have a significantly adverse impact on adjacent existing residential uses.
- (6) If roads, drives, or parking areas are located less than 125 feet from an existing single-family residential subdivision or single-family residential lots, a solid wall or combination berm and solid wall not less than eight feet in height must be constructed not less than 25 feet from the abutting property and landscaped (between the wall and the abutting property) with a minimum of five trees and 18 shrubs per 100 lineal feet or a 30-foot wide Type F buffer with the hedge planted a minimum of 20 feet from the abutting property. Where residences will be constructed between the road, drive or parking area and the existing residential subdivision or lots, the wall or wall and berm combination are not required.
- (7) Uses or activities that generate noise, dust, odor, heat, glare or other similar impacts, must provide a type C or F buffer if, in the opinion of the Director, the proposed development will have a significantly adverse impact on adjacent property.
- (8) Walls, berms and buffer plantings must not be placed so they violate the vehicle visibility requirements of

8/20/2020

Lee County, FL Land Development Code

section 34-3131.

- (9) *Development abutting natural waterway.* Except where chapter 33 provides a stricter standard for Greater Pine Island (as defined in Goal 14 of the Lee Plan and in section 33-1002), there must be a 50-foot wide vegetative buffer landward of nonseawalled natural waterways as measured from the mean high water line or top of bank, whichever is further landward.
- a. In residential subdivisions, the buffer must be located within a common area or tract, and outside of all private property boundaries. Location of the buffers in accord with this section will not prevent the issuance of residential dock permits meeting the requirements of section 26-71(g) or prohibit use of the buffer area for passive recreational uses.
 - b. Existing native vegetation within the buffer area must be retained. The natural waterway buffer must include, at minimum, six native canopy trees and 50 native shrubs per 100 linear feet, which may be met through credits from the existing native vegetation within the waterway buffer area at a 1:1 credit ratio. If existing native vegetation is not present to meet the buffer vegetation standards, a planting plan must be submitted to environmental sciences for review prior to local development order approval. All proposed plantings within the natural waterway buffer area must be installed to mimic a natural system, and all plantings must comply with the plant standards set forth in section 10-420. The use of heavy mechanical equipment such as bulldozers, front end loaders, hydraulic excavators, or similar equipment is prohibited, unless prior written approval is obtained from the County.
 - c. The natural waterway buffer must be designed to incorporate the natural resources maintenance easement required under section 10-328(a). Vegetation removal within the buffer is limited to
 1. Routine removal of exotics and downed vegetative debris;
 2. Limited removal to allow access of vehicles for maintenance of the waterway;
 3. Removal permitted as a condition of dock permit approval; and
 4. Prior to removal of native vegetation, approval must be obtained from ES staff.
- (10) All freestanding parking areas, whether commercial, public or private, not associated with other development must provide a D type buffer for the right-of-way and C type buffer if they abut single-family residential or multiple-family residential uses or zoning.
- (11) *Use of buffer areas.* Required buffers may be used for passive recreation such as pedestrian, bike, or equestrian trails, provided that:
- a. No required trees or shrubs are eliminated;
 - b. Not more than 20 percent of the width of the buffer is impervious surface;
 - c. The total width of the buffer area is maintained; and
 - d. All other requirements of this chapter are met.

(Ord. No. 92-44, § 13(E), 10-14-92; Ord. No. 94-28, § 24, 10-19-94; Ord. No. 95-12, § 5, 7-12-95; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 00-14, § 3, 6-27-00; Ord. No. 01-18, § 2, 11-13-01; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 06-25, § 1, 11-28-06; Ord. No. 07-19, § 2, 5-29-07; Ord. No. 07-24, § 3, 8-14-07; Ord. No. 09-23, § 4, 6-23-09; Ord. No. 10-25, § 2, 6-8-10; Ord. No. 13-10, § 3, 5-28-13; Ord. No. 16-19, § 3, 11-15-16; Ord. No. 17-11, § 1, 9-5-17; Ord. No. 19-03, § 4, 4-2-19)

Sec. 10-417. - Irrigation design standards.

To improve the survivability of required landscaping, cultivated landscape areas must be provided with an automatic irrigation system. All required irrigation systems must be designed to eliminate the application of water to impervious areas, including roads, drives and other vehicle areas. Required irrigation must also be designed to avoid impacts on existing native vegetation.

All new developments that have required landscaping must be irrigated by the use of an automatic irrigation system with controller set to conserve water. Moisture detection devices must be installed in all automatic sprinkler systems to override the sprinkler activation mechanism during periods of increased rainfall. Where existing irrigation systems are modified requiring the acquisition of a permit, automatic activation systems and overriding moisture detection devices must be installed. Irrigation water sources shall be evaluated in the following order:

- (1) When and where available, reuse water;
- (2) Surface water;
- (3) Groundwater;
- (4) Any other non-potable water;
- (5) Potable water.

(Ord. No. 98-28, § 2, 12-8-98; Ord. No. 17-18, § 1, 11-21-17)

Sec. 10-418. - Surface water management systems.

Design standards. Techniques to mimic the function of natural systems in surface water management systems are as follows:

- (1) *Shoreline configuration of surface water management lakes or ponds.* Shorelines must be sinuous in configuration to provide increased length and diversity of the littoral zone. Sinuous is defined as serpentine, bending in and out, wavy or winding. See Illustration 10-418(1).

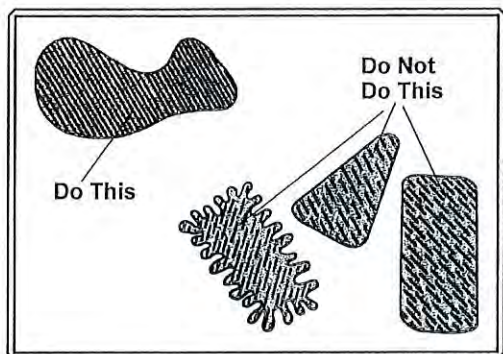


Illustration 10-418(1)

- (2) *Planted littoral shelf (PLS).* The following features are considered sufficient to mimic the function of natural systems, improve water quality and provide habitat for a variety of aquatic species, including wading birds and other waterfowl.
 - a. *Size requirements.* The PLS shoreline length must be calculated at 25 percent of the total linear feet of the lake at control elevation.
 - b. *Location criteria.*
 1. The PLS should be concentrated at one location of the lake, preferably adjacent to a preserve area, to maximize its habitat value and minimize maintenance efforts. The required PLS may be divided and placed in multiple locations as long as no PLS area is smaller than 1,000 square feet. Whenever possible, the PLS must be located away from residential lots to avoid maintenance and aesthetic conflicts with residential users.
 2. The PLS may be located adjacent to control structures and pipe outlets or inlets to maximize water quality benefits and not impede flow.
 3. If contained within a lake the PLS must function as a typical freshwater marsh in ponds with slopes from 6(H) to 1(V) to not more than 4(H) to 1(V).

8/20/2020

Lee County, FL Land Development Code

c. *Shelf configuration.*

1. The PLS must be designed to include a minimum of a 20 foot wide littoral shelf extending waterward of the control elevation at a depth of no greater than two feet below the control elevation.
2. A detailed cross section of the PLS must be depicted on the approved development order plan.

d. *Plant selection.*

1. Herbaceous plants must be selected based upon the expected water level fluctuations and maximum water depths in which the selected plants will survive. The PLS areas must be planted with at least four different native herbaceous plant species.
2. *Plant calculations.* The required number of herbaceous plants is calculated based upon placement spaced two foot on center for the total area encompassed by the PLS. The PLS must be planted with minimum two-inch liner container herbaceous plants.

The total number of plants for the PLS may be calculated by taking the total linear feet of shoreline multiplied by 25 percent, then multiplied by the 20-foot wide shelf and divided by four to obtain the two-foot on center spacing.

3. Native wetland trees may be substituted for up to 25 percent of the total number of herbaceous plants required. One tree (minimum ten-foot height; 2 inch caliper, with a four-foot spread) may be substituted for 100 herbaceous plants. Trees must meet the minimum standards set forth in section 10-420.

e. *Shelf elevation.* The design elevation of the PLS will be determined based upon the ability of the PLS to function as a marsh community and the ability of selected plants to tolerate the expected range of water level fluctuations.f. *Survival of plant materials.* Trees and herbaceous plants must be maintained in perpetuity consistent with section 10-421(b).

- (3) *Bulkheads, geo-textile tubes, riprap revetments or other similar hardened shoreline structures.* Bulkheads, geo-textile tubes, riprap revetments or other similar hardened shoreline structures may comprise up to 20 percent of an individual lake shoreline. These structures cannot be used adjacent to single-family residential uses. A compensatory littoral zone equal to the linear footage of the shoreline structure must be provided within the same lake meeting the following criteria:
- a. A five-foot wide littoral shelf planted with herbaceous wetland plants. To calculate the littorals for this shelf design indicate the number of linear feet of shoreline structure multiplied by five feet for the littoral shelf width divided by two to obtain the required plant quantity; or
 - b. An equivalent littoral shelf design as approved by the Director.
- (4) Restoration of existing bank slopes that have eroded over time and no longer meet the minimum littoral design criteria applicable at the time the lakes were excavated will be in accordance with section 10-329(f).

(Ord. No. 92-44, § 13(H), 10-14-92; Ord. No. 94-28, § 27, 10-19-94; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 01-03, § 2, 2-27-01; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 09-23, § 4, 6-23-09; Ord. No. 13-10, § 3, 5-28-13; Ord. No. 16-19, § 3, 11-15-16)

Sec. 10-419. - Alternate landscape betterment plan.

Projects that cannot comply with the criteria of this division may demonstrate how the requirements can be more effectively accomplished through an alternate landscape betterment plan. Alternative, creative designs are encouraged for difficult sites for landscape design, including but not limited to existing developments, and irregularly shaped parcels. The approval of the alternate

landscape betterment plan is at the Development Services Director's discretion and may include conditions to ensure that the overall landscape design complies with the intent of this division.

The following conditions must be met:

- (1) The plan must provide the minimum open space requirements of section 10-415.
- (2) The plan must be labeled as an alternate landscape betterment plan, and delineate, identify and locate all changes to the requirements of this division.
- (3) 100 percent of the required trees installed must be native species.
- (4) The plan must designate the location of all plant material to be installed.
- (5) The proposed alternate landscape betterment plan must exceed the intent of the minimum landscape requirements.
- (6) Any changes to an approved alternate landscape betterment plan must be reviewed as minor change.

(Ord. No. 92-44, § 13(I), 10-14-92; Ord. No. 94-28, § 28, 10-19-94; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 13-10, § 3, 5-28-13; Ord. No. 16-19, § 3, 11-15-16)

Sec. 10-420. - Plant material standards.

- (a) *Quality.* Plant materials used to meet the requirements of this division must meet the standards for Florida No. 1 or better, as set out in Grades and Standards for Nursery Plants, Parts I and II, Department of Agricultural, State of Florida (as amended). Root ball sizes on all transplanted plant materials must also meet state standards.
- (b) *Native varieties.* At least 75 percent of the trees and 50 percent of the shrubs used to fulfill these requirements must be native Florida species.
- (c) *Trees and palms.*
 - (1) Code-required trees must be a minimum of ten feet in height, have a two-inch caliper (at six inches above the ground) and a four-foot spread at the time of installation. Palms must have a minimum of ten feet of clear trunk at planting. Trees having an average mature spread or crown less than 20 feet may be substituted by grouping the same so as to create the equivalent of a 20-foot crown spread. Trees adjacent to walkways, bike paths and rights-of-way must be maintained with eight feet of clear trunk.
 - (2) Larger trees substituted to reduce the minimum number of general trees (palms excluded) must be no less than four inches in diameter at six inches above the ground and no less than 16 feet in height at the time of planting. The general tree requirement cannot be reduced in number by more than 50 percent.
- (d) *Shrubs and hedges.* Shrubs must be a minimum of 24 inches (48 inches for type F buffers) in height, at time of planting. Saw palmettos (*Serenoa repens*) and coonties (*Zamia floridana*) may be used as shrubs, provided they are 12 inches in height at time of planting. All shrubs must be a minimum three-gallon container size and be spaced 18 to 36 inches on center. They must be at least 36 inches (60 inches for type F buffers) in height within 12 months of time of planting and maintained in perpetuity at a height of no less than 36 inches (60 inches for type F buffers).
- (e) Required hedges must be planted in double staggered rows and maintained so as to form a continuous, unbroken, solid visual screen within a minimum of one year after time of planting.
- (f) The height of all trees, palms, and shrubs located within the buffer areas must be measured from the parking lot grade of the project site. All other plants are measured from the final grade in which they reside. Tree and shrub heights may not be less than the minimum requirements set forth in LDC section 10-420(c) and 10-420(d).
- (g) *Mulch requirements.* A two-inch minimum layer, after watering-in, of mulch or other recycled materials must be placed and maintained around all newly installed trees, shrubs, and groundcover plantings. Each tree must have a ring of mulch no less than 24 inches beyond its trunk in all directions. The use of cypress mulch is strongly discouraged. Sand, gravel, rock, or shell are not appropriate mulch materials.

- (h) *Invasive exotics.* The following highly invasive exotic plants may not be planted, (ie. are prohibited) and must be removed from the development area. Methods to remove and control invasive exotic plants must be included on the development order. A statement must also be included on the development order that the development area will be maintained free from exotic plants in perpetuity. For purposes of this subsection, invasive exotic plants include:

Prohibited Invasive Exotics			
Common name	Scientific name	Common name	Scientific name
Earleaf acacia	<i>Acacia auriculiformis</i>	Old World climbing fern	<i>Lygodium microphyllum</i>
Woman's tongue	<i>Albizia lebbbeck</i>	Melaleuca, paper tree	<i>Melaleuca quinquenervia</i>
Bishopwood	<i>Bischofia javanica</i>	Downy rose myrtle	<i>Rhodomyrtus tomentosus</i>
Australian pines	<i>All Casuarina species</i>	Chinese tallow	<i>Sapium sebiferum</i>
Carrotwood	<i>Cupianopsis anacardioides</i>	Brazilian pepper, Florida holly	<i>Schinus terebinthifolius</i>
Rosewood	<i>Dalbergia sissoo</i>	Tropical soda apple	<i>Solanum viarum</i>
Air potato	<i>Dioscorea alata</i>	Java plum	<i>Syzygium cumini</i>
Murray red gum	<i>Eucalyptus camaldulensis</i>	Rose apple	<i>Syzygium jambos</i>
Weeping fig	<i>Ficus benjamina</i>	Cork tree	<i>Thespesia populnea</i>
Cuban laurel fig	<i>Ficus microcarpa</i>	Wedelia	<i>Wedelia trilobata</i>
Japanese Climbing fern	<i>Lygodium japonicum</i>		

- (i) If dry detention areas are planted with native clump grasses in lieu of sod or seeding, then the plants must be a minimum one-gallon container size planted three-foot on center.
- (j) *Credits.*
- (1) Except for prohibited invasive exotic species as listed above, every consideration must be given to retaining as much of the existing plant material as possible.
 - (2) Each existing indigenous native tree preserved in place, which has a trunk diameter of four inches or greater measured at four and one-half feet above the ground (dbh) will receive a credit of five trees against the general tree requirements. Native palms preserved in place that are eight feet or greater from ground level to base of fronds, will receive a credit of three trees. Existing sabal palms, identified on the development order plans that are relocated onsite will be given a two-tree credit. Credits for existing trees may not be used to reduce the required parking canopy trees in parking or vehicle use areas. Existing native trees in buffers may be used for credit provided they occur within the required 100-foot buffer segment.

Credits will apply only when the trees are labeled as protected-credit trees. If the protected-credit trees die within three years from the development order certificate of compliance, they must be replaced by the number of credit trees taken.

- (3) Credits will apply where the preserved tree is in a barricaded area at least two-thirds the radius of the crown spread of the tree measured from the trunk center. In no case may this area radius be less than two and one-half feet. For indigenous native pine trees, the barricaded area may be no less than the full crown spread of the tree, unless other measures such as tie-walls or special slope treatment are constructed for additional protection. Prior to the land clearing stage of development, the owner, developer or agent must erect protective barriers that are at minimum made of three-foot high silt fence, three-foot high orange construction fence or approved alternative barricading material. For all native, indigenous open space areas, including shrubs and ground cover, barricades must be erected around the perimeter of the vegetation. The owner, developer or agent may not cause or permit the movement of equipment or the storage of equipment, material, debris or fill to be placed within the required protective barrier. The protected trees must remain alive and healthy at the end of the construction in order for this credit to apply.
- (4) A tree location plan must be submitted when general trees located within a designated preserve are being claimed for credit. The tree location plan must include specific information about all trees that are being preserved for credit within the entire development footprint. The tree location plan must: (1) be at the same scale as the site plan; (2) show the location of trees to be saved; (3) state the caliper for each tree (four-inch minimum caliper measured at four and one-half feet above ground level); and (4) identify the species of each tree.

(Ord. No. 92-44, § 13(F), 10-14-92; Ord. No. 94-28, § 25, 10-19-94; Ord. No. 96-06, § 4, 3-20-96; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 05-14, § 3, 8-23-05; Ord. No. 09-23, § 4, 6-23-09; Ord. No. 11-08, § 4, 8-9-11; Ord. No. 16-19, § 3, 11-15-16)

Sec. 10-421. - Plant installation and maintenance standards.

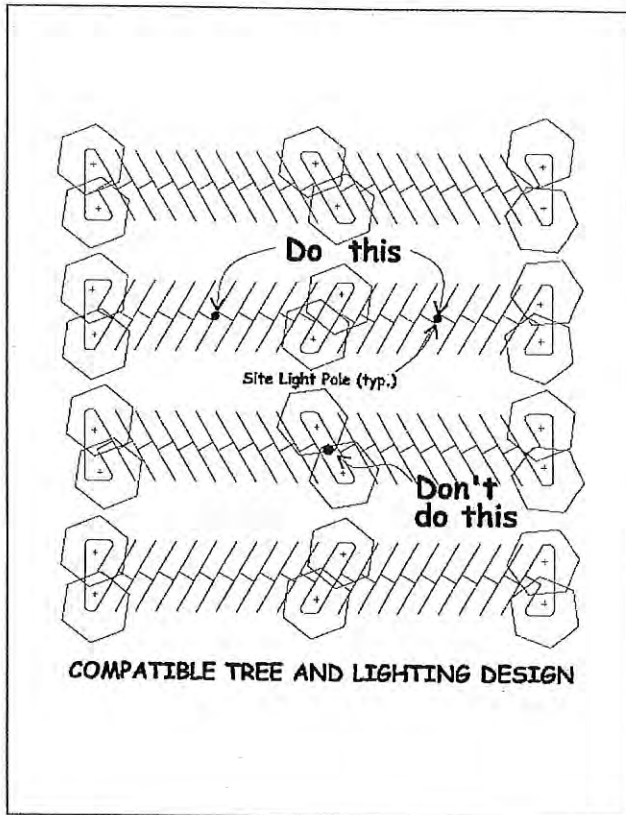
- (a) *Installation.* Plant materials must be installed in soil conditions that are conducive to the proper growth of the plant material. Limerock located within planting areas must be removed and replaced with native or growing quality soil before planting.

A plant's growth habit must be considered in advance of conflicts that might be created (e.g. views, signage, overhead power lines, lighting, buildings, and circulation). Trees may not be placed where they interfere with site drainage, subsurface utilities, or overhead utility lines, or where they will require frequent pruning in order to avoid interference with overhead power lines. Light

8/20/2020

Lee County, FL Land Development Code

poles must be located outside of all parking islands containing required trees. See Illustration 10-421(a).

Illustration 10-421(a)

All landscape materials must be installed in a recognized horticultural correct manner. At a minimum, the following installation requirements must be met:

- (1) All landscape areas must be mulched unless vegetative cover is already established.
- (2) Trees and shrubs used in buffers must be planted in a minimum width area equal to one-half the required width of the buffer. However, in no case may the planting area be less than five feet in width.
- (3) All landscaped areas must be provided protection from encroachment by any type of vehicle.
- (4) All required plants used in buffers and landscaping must be installed using xeriscape principles. Xeriscape principles include water conservation through drought-tolerant landscaping, the use of appropriate plant material, mulching, and the reduction of turf areas.
- (5) Utility or drainage easements may overlap required buffers; however, no code required trees or shrubs may be located in any utility or drainage easement unless a written statement, from the entity holding the beneficial interest in the easement, is submitted specifically stating that the entity has no objection to the landscaping and, that the proposed landscaping will not interfere with the long term maintenance of the infrastructure within easement area. No code required landscaping may be located in any street easement or right-of-way. To avoid conflicts with overhead utility lines, only trees less than 20 feet in height at maturity may be used directly adjacent to an overhead line. Variances or deviations from the requirements of this subsection are prohibited
- (6) Safe sight distance triangles at intersections and vehicle connections. Where an access way intersects a right-of-way or when a property abuts the intersection of two or more rights-of-way, a minimum safe sight distance triangular area must be established. Within this area, vegetation must be planted and maintained in a way that

provides unobstructed visibility at a level between 30 inches and eight feet above the crown of the adjacent roadway. Landscaping must be located in accordance with the roadside recovery area provisions of the State of Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction, and Maintenance of Streets and Highways (FDOT Green Book) where appropriate.

- (7) Signage located within or adjacent to landscape buffer area. All trees and shrubs located within landscape buffer must be located so as not to block the view of signage.
- (8) If a wall or fence is proposed, but not required, then the required buffer plantings must be installed on the exterior side (between the wall and the abutting property or street right-of-way) of the wall or fence.
- (b) *Maintenance of landscaping.* The owner is responsible for maintaining the required landscaping in a healthy and vigorous condition at all times. Tree and palm staking must be removed within 12 months after installation. All landscapes must be kept free of refuse, debris, disease, pests, and weeds. Ongoing maintenance to prohibit the establishment of prohibited invasive exotic species is required.
- (c) *Pruning.* Vegetation required by this code may only be pruned to promote healthy, uniform, natural growth of the vegetation (except where necessary to promote health, safety, and welfare) and be in accordance with "American National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices (Pruning) (A300, Part 1)" by the American National Standard Institute, and "Best Management Practices: Tree Pruning" by the International Society of Arboriculture (ISA).

Trees must not be severely pruned to permanently maintain growth at a reduced height or spread. Pruning must not interfere with the design intent of the original installation. Severely pruned trees must be replaced by the property owner. Replacement trees must meet the tree size requirements of LDC [section 10-420](#). A plant's growth habit must be considered in advance of conflicts which might arise (i.e. views, signage, overhead power lines, lighting, circulation, sidewalks, buildings, and similar conflicts).

(Ord. No. 92-44, § 13(G), 10-14-92; Ord. No. 94-28, § 26, 10-19-94; Ord. No. 98-28, § 2, 12-8-98; Ord. No. 01-18, § 2, 11-13-01; Ord. No. [05-14](#), § 3, 8-23-05; Ord. No. [09-23](#), § 4, 6-23-09; Ord. No. [13-10](#), § 3, 5-28-13)

Sec. 10-422. - Landscape certificate of compliance.

The landscape architect must inspect and certify that all open space area, landscaping and the irrigation system are in substantial compliance with the landscape and irrigation plans approved as part of the development order. An "as built" landscape plan highlighting any changes to the approved plans must be included with the certification. Any changes to an "alternative landscape betterment plan" must be approved by minor change to the development order. The general certificate of compliance procedure outlined in [section 10-183](#) is applicable.

(Ord. No. 98-28, § 2, 12-8-98)

Sec. 10-423. - Restoration standards for native vegetation removed without approval.

A restoration plan based on the minimum standards set out in this division will be required if indigenous native vegetation has been removed without permit or approval. Restoration plantings for vegetation other than trees must be nursery grown, containerized, and planted at no less than three feet on center. The number of replacement plantings will be computed by the square footage of the area destroyed. All other restoration criteria as set forth in [chapter 14](#), article V, pertaining to tree protection, will also apply. Restoration plantings for indigenous native trees must be in compliance with the standards set forth in [chapter 14](#), article V.

(Ord. No. 92-44, § 13(J), 10-14-92; Ord. No. 94-28, § 29, 10-19-94; Ord. No. 98-28, § 2, 12-8-98)

Sec. 10-424. - Landscape requirements for specific uses.

8/20/2020

Lee County, FL Land Development Code

The following uses require landscaping or screening beyond the minimum standard requirements:

Recreational vehicle planned developments, section 34-939(a)(3).

Private recreational facilities planned developments, section 34-941.

Display, sale, rental or storage facilities for motor vehicles, boats, recreational vehicles, trailers, mobile homes or equipment, section 34-1352.

Wireless communications facilities, section 34-1447(c)(4)(c).

Essential services and facilities, section 34-1616(b).

Mining, chapter 12.

Residential project walls, section 34-1743(b)(3).

Open storage, section 34-3005(b)(1).

San Carlos Island Redevelopment Overlay Districts, Chapter 33.

(Ord. No. 05-14, § 3, 8-23-05; Ord. No. 08-21, § 1, 9-9-08)

Sec. 10-425. - Open space and landscape requirements in the mixed use overlay.

Properties located within the mixed use overlay as delineated on Map 1, Page 6 of the Lee Plan and described in Objective 11.2 must provide the following minimum open space and landscape requirements. The landscape requirements for specific uses identified in section 10-424 must be provided.

- (a) *Open space.* Large developments must provide a minimum of 20 percent open space and small developments must provide a minimum of ten percent open space with the following exceptions:
 - (1) Planning communities governed by chapter 33; and
 - (2) Open space requirements may be reduced through the use of Greater Pine Island Transfer of Development Units (TDUs) in accordance with chapter 2.
- (b) *General tree requirements.* One canopy tree must be provided per 1,000 square feet of required open space. No palm trees may be used to count toward general landscape requirements. Root barriers or other soil structure material must be incorporated into the landscape design to minimize damage to pavement, where appropriate.
- (c) *Indigenous vegetation.* Indigenous requirements must be consistent with section 10-415(b).
- (d) *Landscaping of parking and vehicle use areas.* Landscaping must be consistent with section 10-416(c).
- (e) *Building perimeter.* Commercial development within the mixed use overlay is required to provide building perimeter planting on only the two sides of the building which are most visible to the public. All other requirements of 10-416(b) must be met.
- (f) *Buffers.* Projects within the mixed use overlay must provide the following buffers:
 - (1) Five-foot wide buffer along rights-of-way planted with five trees per 100 feet linear feet. The required building perimeter planting may be used in lieu of buffer if adjacent to the right-of-way.
 - (2) Ten-foot wide buffer with type B plantings is required along property lines which abut single family residence(s).
 - (3) Buffers are not required along property lines unless specified in (1) and (2) above.

(Ord. No. 17-11, § 1, 9-5-17)

8/20/2020

Lee County, FL Land Development Code

Secs. 10-426—10-440. - Reserved.

8/20/2020

Manatee County, FL Land Development Code

Chapter 7 - ENVIRONMENTAL AND CULTURAL RESOURCE PROTECTION

PART I. - TREE PROTECTION, LANDSCAPING, BUFFERS, AND IRRIGATION.

Section 700. - Tree Protection.

700.1. - Purpose and Intent.

It is the intent of this Section to regulate the removal, replacement, or relocation of trees within the County in order to preserve, protect and enhance valuable natural resources. By limiting the removal of existing trees, the need for open space irrigation will be reduced. Existing environmentally suitable native vegetation, plant communities shall be protected and incorporated into the site plan, wherever feasible.

700.2. - Application.

- A. **Generally.** No person may remove, relocate, or otherwise destroy any tree or cause, allow, authorize, or assist in the removal, relocation or destruction of same without first obtaining a tree removal permit from the Department Director. The application shall be reviewed by the Department Director.
- B. **Exempted Activities.**
 1. *Single Family.* Trees located on any single family, mobile home subdivision, mobile home park, or duplex lot shall be exempt. This does not include any areas of common ownership within parks or subdivisions.
 2. *Trees on Agricultural or Mining Property.* Any tree located on land zoned and utilized for agricultural or mining purposes, provided the removal, replacement, relocation, or destruction solely occurs in conjunction with the use of the premises for agricultural or mining purposes and does not occur in anticipation of development. All such clearing is subject to County, State and Local rules, protecting wetlands and other restricted habitat.
 3. *Trees in Approved Developments.* Any trees which are located in a subdivision, development, or other project which has received County approval, provided that the removal, replacement, relocation or destruction of trees are specifically shown on the subdivision, development, or project plan approval, and provided that such plans have been reviewed and approved by the Department Director.
 4. *Trees on Commercial Horticultural Premises.* All trees and plants which are grown by a licensed plant or tree nursery or tree farm, provided that such trees and plants are planted and grown on the licensee's premises for the sale or intended sale to the general public in the ordinary course of business.
 5. *Trees Damaged by Natural Calamities.* All trees which have been destroyed or substantially damaged by hurricane or other natural calamity or Act of God. The tree must be so damaged that it would require unreasonable costs to save it, or would be a hazard to human life or property.
 6. *Septic Fields.* Area for septic fields required by the Florida Department of Health - Manatee County.
 7. *Trees within the Rights-of-Way.* Trees within the rights-of-way for the purpose of improvements, roadway widening, sidewalks and utility installations.
 8. *Unprotected Species.* The prohibition in paragraph 700.2.A, above, shall not apply to the following unprotected species, and their removal from the site is encouraged. See also 701.4.E. However, if such species were originally installed as part of the required landscaping for a project, such trees may not be removed without a tree removal permit. The fee for this permit shall not apply to these cases.
 - a. *Broussonetia Papyrifera* (Paper Mulberry);
 - b. *Casuarianaceae* (Australian Pine);
 - c. *Enterolobium cyclocarpum* (Ear Tree);
 - d. *Melaleuca Leueadendra* (Punk);
 - e. *Melia Azedarach* (Chinaberry Tree);
 - f. *Schinus Terebinthifolius* (Brazilian Pepper);
 - g. *Rutaceae*, Citrus (Citrus Tree);
 - h. *Cinnamomum camphora* (Camphor Tree);
 - i. *Cupaniopsis anacardioides* (Carrotwood);
 - j. *Ficus microcarpa* (Laurel fig);
 - k. *Mimosa pigra* (Catclaw Mimosa);
 - l. *Sapium sebiferum* (Chinese Tallow Tree);
 - m. *Dalbergia sissoo* (Indian Rosewood).
 9. *Normal Maintenance of Required Trees.* Maintenance and pruning of required canopy or understory trees is allowed in order to remove diseased or dead wood, remove hazardous limbs, remove or trim limbs that would obstruct vehicular movement, utility lines, or pedestrian traffic, remove double leaders or crossing limbs, or maintain or correct the size of the tree. Trimming to provide proper clearance from overhead utility lines shall be allowed; however, it shall not be allowed to significantly alter the natural form of the tree. Pruning that grossly alters the natural characteristic form of that species is not permitted, (e.g. topiary sculptures or "lollipop" shapes).

8/20/2020

Manatee County, FL Land Development Code

10. *Degenerative Disease.* Removal of trees with terminal degenerative diseases shall be exempt from Section 700.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

700.3. - Procedure.

- A. **Submission of Application.** A person desiring a tree removal permit shall submit a written application to the Department Director. The application shall include the following information:
1. *Site Plan.* An overall site plan including the approximate shape and dimensions of the lot or parcel of land, together with existing and proposed driveways, structures and improvements.
 2. *Required Generalized Tree Inventory.* Each application for a tree removal permit shall be accompanied by a generalized tree and vegetation inventory showing the approximate location and extent of vegetation and trees upon the site shall be provided no later than preliminary or final site plan (when a preliminary is not required). The inventory shall be based upon the most current available information. For non-residential and multi-family development, the inventory may be in the form of an aerial or a field survey, and shall be accompanied by photographs illustrating typical areas of trees. The generalized tree and vegetation inventory shall be prepared at the same scale as the site development plans or in some other manner which clearly illustrates the relationships between the areas of trees and the proposed site improvements. This inventory shall also include specifications regarding both the common and botanical names of all protected species.
 3. *Location of Trees to be Removed.* The location of all trees which are proposed to be removed, replaced, or relocated including the limits of clearing. Subject to the Department Director's approval, the limits of clearing shall generally include:
 - a. *Streets.* Street Construction and necessary slope construction.
 - b. *Easements.* Public service or utility easements and rights-of-way. This shall include area of utility line installation with any construction easements necessary for such installation and easements for maintenance access. These easements shall not be cleared prior to actual line installation.
 - c. *Building Area.* Building roof coverage and ancillary structure such as patios and porches plus twenty-five (25) feet on all sides for construction activity.
 - d. *Circulation, Recreation Areas.* Driveways, walkways, parking lots, and other land area necessary to the installation of the proposed development or use. Other necessary land area may include area for gardens, tennis courts, swimming pools, and lawn areas and other related structures or uses.
 - e. *Septic Fields.* Area for septic fields as required by the Florida Department of Health in Manatee County.
 - f. *Sediment Basins.* Only those trees within the area necessary for construction of the sediment basin, the area in which sediment will collect, and the area necessary for construction and maintenance of the basin shall be cleared of trees. Configuration of the basin shall utilize natural terrain as much as possible to minimize tree removal.
 - g. *Detention and Retention Basin.* Only those trees within the area necessary for construction of the detention pond and the area necessary for construction and maintenance of the pond shall utilize natural terrain as much as possible to minimize tree removal.
 - h. *Visibility Triangle.* See Section 1002.
 4. *Protective Measures.* A statement explaining how any trees proposed for relocation and replanting as part of a development will be protected during the construction of the development. A plan detail indicating the location of protective barriers around trees to be protected shall also be provided.
- B. **Separate Tree Removal Permit Required.** When tree removal is occasioned by any proposed development that requires a site plan, preliminary subdivision plat, or final subdivision plat, the approved plan or plat shall constitute a tree removal permit. In all other cases, the application for a tree removal permit shall be on a form provided by the Department Director.
- C. **Review of Application.** Upon receipt of the complete permit application, the Department Director shall review the application and visit the site of the proposed development. Within a reasonable period of time, the Department Director shall either approve or deny the application, and shall furnish the applicant a written statement of the reasons for any denial. Where tree removal is considered in conjunction with site plan or subdivision plat review, the Department Director shall forward a copy of the written statement to the appropriate decision-making body with the application for subdivision or conditional use approval and any other relevant materials.
- D. **Tree Replacement Funds.** Any payments collected under Section 700.3.I shall be deposited into the Tree Protection Trust Fund and are expressly designated for the replacement of trees or those incidental materials, i.e. mulch, irrigation mechanisms, required for those items to be planted. These funds shall not however be used for the support of existing trees. The application shall be accompanied by a tree removal permit fee in an amount to be prescribed by the Board.
- E. **Trust Fund.** There is hereby created a Tree Protection Trust Fund for the purpose of insuring that the funds collected pursuant to this Section are utilized as provided in Section 700.3.D, Tree Replacement Funds.
- F. **Expenditure.** Any funds not expended or encumbered for planning, acquisition or planting by the end of the calendar quarter immediately following seven (7) years from the date of payment, shall be returned to the fee payer with interest at the passbook savings rate.
- G. **Extension.** The Board may by resolution, extend the date by which funds must be refunded by up to three (3) years. Such an extension shall be made upon a finding that within three (3) years, the planned replacement activities will be completed.
- H. **Standards.** The Department Director shall not approve a tree removal permit application unless the plan will destroy no more existing trees than is

8/20/2020

Manatee County, FL Land Development Code

reasonably necessary to achieve the proposed development. The Department Director shall consider in this regard:

1. *Necessity*. The extent to which the actual or intended use of the property is in accordance with the regulations of the zoning district in which the property is located and requires the destruction of trees.
 2. *Outstanding Quality of Tree or Plant Communities*. The desirability of preserving a tree or plant community by reason of its size, age, or some other outstanding quality, such as uniqueness, habitat importance, rarity or status as a landmark or species specimen.
 3. *Environmental Effects*. The extent to which the area would be subject to increased water runoff and other environmental degradation due to the removal of the trees.
 4. *Development Density*. The desirability of preserving tree cover and associated vegetation in densely developed areas.
 5. *Grade Changes*. The effect that changes in the natural grade will have on the remaining trees and vegetation.
 6. *Signage*. The visibility of an existing or proposed sign shall not serve as a reason for approval of a tree removal permit.
- I. **Tree Replacement Alternatives**. The Department Director shall condition a tree removal permit for all projects upon the replacement of the removed trees at a one-to-one ratio. Cash payment to Manatee County may be made in lieu of replacement. The Department Director may accept a combination of either of the above methods for compliance with this Section.
1. The Department Director shall also have the option of considering replacement of the trees on adjacent sites, if there is no reasonable replacement alternative on-site and the adjacent site is of sufficient size to support the placement of such trees. If such an alternative is chosen, the applicant must provide a landscaping plan for the replacement trees as well as a written maintenance agreement for the trees. All trees planted off-site shall be at least Florida Quality No. 1 nursery stock. If the adjacent site is single-owner occupied, then it shall be the responsibility of that owner to maintain all of the replacement trees in perpetuity and replace any trees that succumb to disease or death. If the adjacent site is the property of a homeowner's association or other group ownership, the association or group shall maintain all replacement trees in perpetuity and replace any trees that succumb to disease or death.
 2. In recognition of overall tree canopy, an alternative method of tree mitigation may be considered by the Department Director, if it is demonstrated that the lost canopy will be replaced within ten (10) years. This alternative shall require a greater quantity of replacement trees while allowing smaller replacement sizes.
 3. The Department Director shall reserve the right to increase the size of the replacement tree under unusual circumstances, such as age of tree, type of tree, rarity and historical significance, or the removal of a tree without a permit.
 4. When trees are to be replaced on individual residential or nonresidential lots within a subdivision, the Department Director may condition the approval of any preliminary plat to allow for replacement at the time of construction on each lot. The placement of trees on an individual lot shall be a prerequisite for an occupancy permit. Notice of replacement trees on each lot must be placed within the homeowner's documents or association documents approved with each final plat. Within this notice the developer shall state that the replacement trees may not be removed unless diseased or dead, in which case, they must be replaced with the same size and type of tree as originally planted on the lot.
 5. Approval of replacement trees to meet the Residential Street Tree requirements of [Section 701.6](#) shall be dependent upon the site design, lot size, existing trees and building envelopes to determine whether the trees will have sufficient room to thrive. The majority of replacement trees within such projects shall be located within common areas within the project such as greenbelts, roadway buffers and screening buffers. The Department Director shall have the authority to approve an alternative replacement method.
 6. When cash in lieu payments are made, the amount of cash payments will be in the manner established by the Board and shall include all material and labor costs, as well as those costs associated with the administration of this program. Payment for Tree Replacement shall be paid prior to the issuance of any Building Permits for the project. Utilization of the cash-in-lieu funds shall be determined by the Board for amounts greater than five thousand dollars (\$5,000.00) or the Department Director for amounts of less than five thousand dollars (\$5,000.00). The funds shall be used for landscaping in affordable housing projects (meeting the criteria of [Section 545](#)), county park projects, street and entranceway beautification programs, and other public projects.
 7. When trees are removed with an approved tree removal permit, such trees shall be replaced as follows:

Existing Tree Size	Required Replacement Caliper Minimum	Ratio of Replacement Trees to Removed Trees
4"—15" D.B.H.	3"	1:1
16"—30" D.B.H.	4"	2:1
Over 30" D.B.H.	4"	3:1

8. All replacement trees shall be at least Florida Quality No. 1 nursery stock.
9. In order to help preserve significant trees (twenty-six (26) inches dbh or greater), an applicant may be given credit towards fulfilling the tree portion of screening, buffering and parking lot landscaping requirements. All such trees shall be in good health. Those trees between twenty-six (26) and thirty-five (35) inches dbh, shall equal three (3) required trees; over thirty-six (36) inches dbh shall equal five (5) required trees. A

condition of use of this incentive is total protection of the tree during construction. Should the tree die as a result of construction practices or post-construction stress, as determined by the Department Director, the replacement trees shall be planted or assurances are made for future planting at the appropriate time, within thirty (30) days of the determination of the death of the tree.

- J. **Identification of Preserved Trees.** Upon approval of a tree removal permit, the location and species or common name of individual trees to be preserved, shall be entered upon the Final Site Plan, Final Development Plan or Preliminary Subdivision Plat. The applicant shall also identify and conspicuously mark any such tree or plant groups to be preserved.
- K. **Protection During Development.** During any land development activity, protective measures shall be taken throughout the entire construction stage to prevent the destruction or damage of all trees to be retained on the site. Specific protective measures shall be outlined by the applicant in writing and to accompany the permit application.
- L. **Time Period of Permits.** Tree removal permits shall continue in force for the same period of time as the development order approval, and shall be subject to the same extension privileges.
- M. **Building Permits.** Building Permits do not authorize the removal of trees unless specifically approved as such by the Department Director. When a tree removal permit is required, a Building Permit shall not be issued until a tree removal permit is issued, or prior tree removal approval has been granted as part of a development order.
- N. **Violations.** In addition to any penalties which may be imposed by Chapter 1, any tree removed, relocated, or damaged in violation of this Section shall be replaced with trees of comparable characteristics. Each removal of a tree shall be deemed a separate offense. The Department Director shall determine the location and number of such replacement trees which will immediately achieve a shade area comparable to that which existed prior to the violation. No Certificate of Occupancy shall be issued until complete replacement occurs. In no instance shall replacement trees be smaller than the minimum requirements set out in Section 700.3.1.7, nor shall the replacement of such trees exempt the violator from the provisions of Section 106: Enforcement, Violations and Penalties.

(Ord. No. 15-05, § 3(Exh. A), 1-8-15; Ord. No. 15-29, § 3(Exh. A), 12-3-15; Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Section 701. - Landscaping and Screening Standards.

701.1. - Purpose and Intent.

The requirements established herein for the installation and maintenance of landscaping and screening are deemed necessary by Manatee County to protect and enhance the community's environmental, economic and aesthetic quality, thereby contributing to the overall objective of promoting the public health, safety and general welfare. More specifically, it is the purpose of this Section:

- A. To promote the conservation of potable and non-potable water;
- B. To aid in stabilizing the environment's ecological balance;
- C. To reduce noise, glare, heat and dust;
- D. To protect, conserve and improve the appearance of property;
- E. To promote energy conservation and personal comfort;
- F. To enhance community appearance, identity and unique natural beauty;
- G. To create visual interest, variety and harmony, and provide contrast and relief from the built-up environment;
- H. To reduce visual and functional conflicts between land uses and activity areas; and
- I. To establish the minimum landscaping and screening standards and criteria that are necessary to achieve the desired quality of life described by the purposes set forth above.

701.2. - Exemptions.

These requirements shall apply to all new development or the expansion of existing development except for the following:

- A. Single-family and duplex dwellings on individual lots, except as provided in Section 701.3.D; and
- B. Developments having been issued a final development order prior to the effective date of this Ordinance.

701.3. - Minimum Required Landscaping.

A. Vehicle Use Areas.

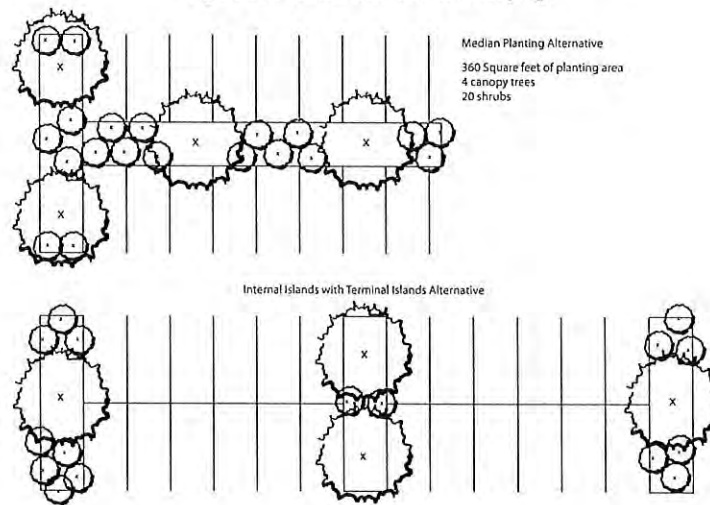
- 1. A vehicle use area is any portion of a development site used for circulation, parking and/or display of motorized vehicles, except junk or automobile salvage yards.
- 2. All vehicle use areas containing more than one thousand (1,000) square feet shall be landscaped in accord with Figure 7-1, which requires three hundred and sixty (360) square feet of planting area, including four (4) canopy trees and twenty (20) shrubs per twenty (20) parking spaces. If one (1) gallon shrubs are used within the landscape islands, forty (40) shrubs shall be required. Tree and shrub sizes shall be in accordance with Section 701.4.B.
- 3. For vehicle use areas serving large vehicles requiring additional maneuvering room, such as truck stops, and motor freight terminals, up to fifty (50) percent of required vehicle use area landscaping may be transferred and added to the perimeter buffer or roadway buffer.

8/20/2020

Manatee County, FL Land Development Code

4. No more than ten (10) consecutive parking spaces shall be allowed without an interior landscape island.
5. The front of a vehicle may encroach upon any interior landscaped area or walkway when said area is at least eight (8) feet in depth, not including curbing, per abutting parking space and protected by curbing. No tree or shrub of more than two (2) feet in height shall be located within two (2) feet of the edge of the landscape area.
6. If a Sign View Area is shown on the landscape plan, the developer will have the choice of either replacing the canopy trees with understory trees within the View Area or moving the trees to another location within the site. A Sign View Area shall be defined as those areas to be left within the sight lines of either free-standing or wall signs by the travelling public on adjacent streets. No more than thirty (30) percent of required trees may be switched to understory trees as a result of this provision. Understory trees must be provided at a ratio of 1.5 to 1 if used to replace canopy trees.
7. Where vehicle use areas abut the roadway, the roadway buffer may serve as the perimeter parking lot buffer. However, where the vehicle use area does not abut a roadway, the perimeter landscaping requirements shall be a minimum width of eight (8) feet containing one (1) canopy tree meeting the minimum requirements of Section 701.8.B per forty (40) feet or substantial fraction thereof, and either shrubs, hedges, berming or fences or any combination thereof, to reach a height of forty-two (42) inches, two (2) years after installation, and being eighty (80) percent opaque.

Figure 7-1: Vehicle Use Area Landscaping



Both options utilize the same requirements

(Ord. No. 15-05, § 4(Exh. B), 1-8-15 ; Ord. No. 15-29, § 3(Exh. A), 12-3-15 ; Ord. No. 16-06, § 3(Exh. A-5), 11-15-16; Ord. No. 16-24, § 3(Exh. A-7), 11-15-16; Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

701.4. - Buffer Zones.

A. Purpose.

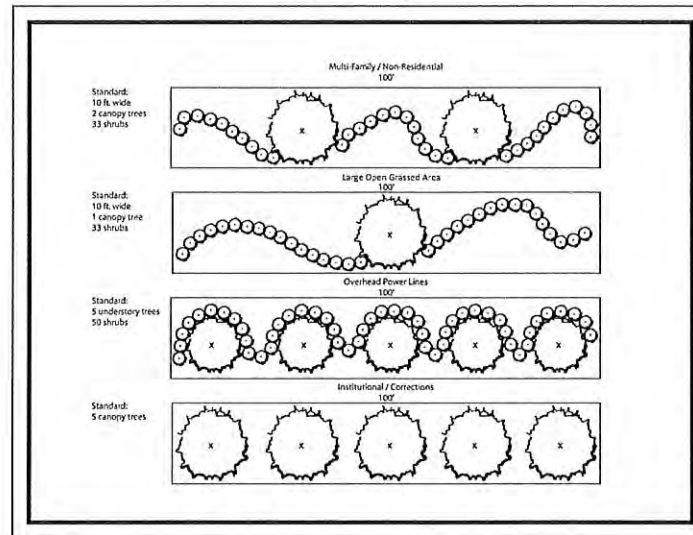
1. Buffer Zones are landscaped strips along parcel boundaries.
2. Buffer Zones serve to separate incompatible uses and/or create attractive boundaries.
 - Widths and degrees of vegetation depend on relationship between uses.
 - Standards are per one hundred (100) linear feet.
 - Plant materials are to be spread relatively evenly throughout the buffer.
 - See Figure 7-3 for required amounts of landscaping.
 - See Figure 7-3 for landscaping alternatives.

B. Buffer Standards

1. *Industrial Adjacent to Residential.* Buffer zones for proposed industrial uses adjacent to residential uses/zoning shall use buffer option E, unless otherwise approved with Planned Development Specific Approval.
2. *Roadway Buffers.* Required for multi-family and non-residential projects along all roadways. Required for single-family projects abutting thoroughfares only. See Section 902.7.C (Exterior Buffer Zones) for developments along urban corridors.
 - i. Reverse frontage lots shall be provided adjacent to major thoroughfares. A twenty (20) foot wide buffer shall be provided along rear property lines abutting right-of-way. Additional lot depth of twenty (20) feet shall be provided to accommodate such buffer when adjacent to collectors, arterials or other thoroughfares.

- (a) See Figure 7-2 for requirements.
- (b) If fences are used, required landscaping shall be located on the exterior, facing the roadway, or adjacent property.
- (c) For hedges within roadway buffers, the shrubs shall reach a height of three (3) feet within two (2) years.
- (d) For roadway buffers that contain overhead power lines, the requirement for canopy trees may be reduced to allow understory trees as shown in Figure 7-2.

Figure 7-2: Roadway Buffer Options per 100 Feet



3. Screening Buffers.

- i. Screening buffers are required between zoning district boundaries.

- ii. The width of the buffer shall be as defined in the Buffer Matrix, Figure 7-4.

The perimeter buffer for a site zoned LM, HM or MP-I shall be a minimum of twenty (20) feet if adjacent to a non-residential district, and thirty (30) feet if adjacent to a residential zoning district.

- iii. Decorative, opaque fences shall be considered:

- Concrete Aggregate;
- Stucco;
- Finish (either colored or painted);
- Brick;
- Stone;
- Glass Block; or
- Wood.

No chain link shall be allowed. (The exception is chain link with slats shall be allowed for the gates of dumpster enclosures.)

- iv. Concrete masonry shall be allowed only if split face design.

- v. Structurally safe, durable and attractive.

- vi. A minimum of six (6) feet in height.

- vii. For hedges used within screening buffer zones, the plant materials used shall reach a minimum height of six (6) feet within three (3) years of planting.

4. Residential Greenbelts.

- i. For all residential projects, a fifteen (15) foot wide perimeter greenbelt buffer shall be required. Streets and utilities providing interneighborhood ties may be permitted to pass through greenbelt buffer areas. Should such greenbelts be located adjacent to single family lots, such lots may not be platted through the greenbelt. In projects consisting entirely of fifteen (15) or less single family lots, greenbelt buffers shall be reduced in width to ten (10) feet.

Exemptions:

8/20/2020

Manatee County, FL Land Development Code

- For new residential subdivisions located in the A or A-1 zoning districts, no greenbelt shall be required, unless designed as a cluster development per Sections 800.11 and 800.12.
 - For lot splits inside or out of a subdivision, resulting in the creation of one additional lot, no greenbelt shall be required.
 - For replatting of existing lots if the total number of lots either remains the same or is reduced, no greenbelt shall be required.
- ii. The greenbelt buffer shall be planted with a minimum of one (1) canopy tree planted every thirty (30) feet on center for the length of the perimeter of the project.
 - iii. For new residential projects abutting non-recreational, non-residential uses, the greenbelt buffer shall also meet the screening buffer requirements that may include either a hedge, fence or wall.
 - iv. All landscaping shall be installed prior to final plat approval, unless performance security is posted guaranteeing the landscaping will be installed prior to the first Certificate of Occupancy.
 - v. Irrigation shall be provided as required pursuant to this Code and installed prior to issuance of the first Certificate of Occupancy of the project.

Figure 7-3: Screening Buffer Options per 100 Feet

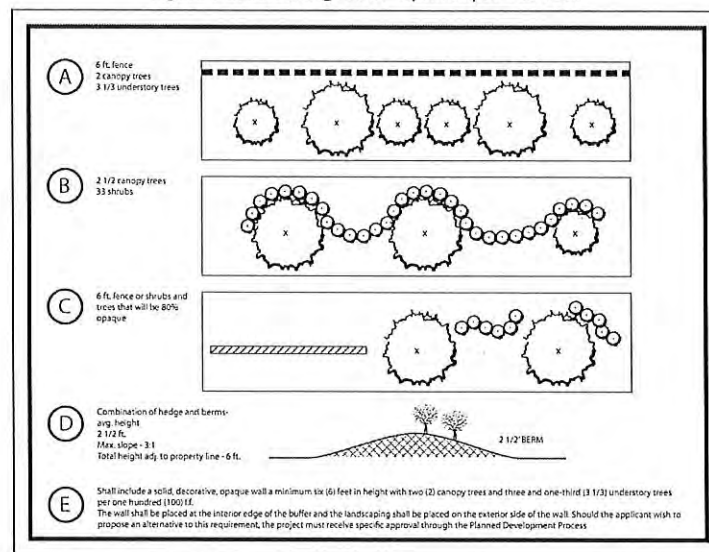


Figure 7-4: Buffer Screening Matrix; Width of Buffer Required (In Feet)

	Abutting Use/or Zoning Width of Buffer Required (in Feet)												
Proposed Use	Res. Excl. M.F.	Multi-Family	Res. Sup. Uses	Community Ser. Uses	Retail Commercial	Service Commercial	Misc. Service	Service	Industrial	Misc. Uses	Rec. Uses	Transp. Uses	Warehouse
Res. Excl. M.F.	0	10	10	10	15	10	15	15	20	15	10	20	20
Multi-Family	10	0	5	10	15	10	10	10	20	10	10	20	15
Res. Sup. Uses	10	5	0	5	10	5	5	5	10	10	5	15	15
Community Ser. Uses	10	10	5	0	5	5	5	5	10	5	5	10	10
Retail Commercial	15	15	10	5	0	5	5	5	10	5	5	10	5

8/20/2020

Manatee County, FL Land Development Code

Serv. Commercial	10	10	5	5	5	0	5	5	10	5	5	10	5
Misc. Service	15	10	5	5	5	5	0	5	10	5	5	10	5
Services	15	10	5	5	5	5	5	0	10	5	5	10	5
Industrial	20	20	10	10	5	5	5	5	0	10	10	5	5
Misc. Uses	15	10	10	5	5	5	5	5	10	0	5	10	10
Rec. Uses	10	10	5	5	5	5	5	5	10	5	0	10	10
Transp. Uses	20	20	15	10	10	10	10	10	5	10	10	0	5
Warehouse	20	15	15	10	5	5	5	5	5	10	10	5	0
Intensive Ag* Uses	15	10	10	10	5	5	5	5	0	10	10	5	5

*Intensive Ag Uses shall be defined for the purpose of this chart to include Agricultural Products Processing Plants, Animal Products Processing Facility, Animal Shelters, Farm Equipment and Supply Establishments, Kennels, Sawmills, Slaughterhouses, Stockyards/Feedlots, and Veterinary Hospitals.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— Ord. NO. 19-03, § 3(Exh. A-7), adopted March 21, 2019, renumbered the former §§ 701.4—701.9 as §§ 701.8—701.13 and enacted new §§ 701.4—701.7 as set out herein. The historical notations have been retained with the amended provisions for reference purposes.

701.5. - Foundation Landscaping.

The amount of twenty (20) square feet per one thousand (1,000) square feet of proposed gross floor area, located contiguous to the building.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

701.6. - Residential Street Trees.

- One (1) canopy tree shall be planted within twenty-five (25) feet of the right-of-way of each local street within a residential development for every fifty (50) linear feet, or substantial fraction thereof, of right-of-way when proposed lots have a minimum of one hundred (100) feet of frontage or greater. When proposed lots have less than one hundred (100) feet of frontage, street trees shall be limited to one (1) canopy tree per frontage. None of these required trees shall be planted within a public or private utilities easement. Palm trees may not be utilized to meet this requirement, unless they are grouped with a minimum of two (2) used for each canopy tree. A maximum of twenty-five (25) per cent of all proposed residential street trees may be palm trees.
- For proposed lots with less than sixty (60) feet of frontage smaller maturing canopy trees or understory trees may be utilized.
- The trees shall be spaced no closer together than twenty-five (25) feet, unless a decorative grouping or alternative method is chosen by the developer. Existing native trees should be used to fulfill these requirements wherever they meet the spacing and size requirements and are adequately protected during construction.
- Installation and initial maintenance of landscaping on all common areas within the project is the developer's responsibility. A notice of responsibility for the property owner's installation and maintenance of the trees shall be drafted in a notice recorded in the public records governing the development.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

701.7. - Redevelopment Standards.

8/20/2020

Manatee County, FL Land Development Code

1. These redevelopment landscape standards apply to approval requests with existing building when:
 - a. A "change of use" that requires a plan approval per Chapter 3;
 - b. Establishing a new use that requires administrative approval; or
 - c. Increasing the Gross Floor Area or the Vehicle Use Area that requires a plan approval per Chapter 3 or Section 1005.8.
2. Exceptions:
 - a. Vehicle Use Areas (parking space) increases due solely to the restriping of existing surfaces are not included within the percentage increase calculation.
 - b. All Special Permit Uses shall be required to meet all of the requirements for landscaping and screening for new development contained in Section 701 without modifications.
3. Any project which results in more than a fifty (50) percent increase in gross floor area or the number of parking spaces shall be required to meet all of the requirements for landscaping and screening for new development contained in Section 701.
4. Any project that proposes an increase in Gross Floor Area (GFA) and/or Vehicle Use Area (parking spaces) exceeding twenty-five (25) percent but less than fifty (50) percent is required to provide landscaping per Section 701 for the area of the increase (new work), and shall upgrade the following existing landscape components to the current Code requirements:
 - a. Roadway buffer;
 - b. Terminal islands;
 - c. Internal islands;
 - d. Foundation landscaping;
 - e. Irrigation;
 - f. Perimeter landscaping; and
 - g. Screening.
5. The above landscaping components shall be installed to meet this code. The following modifications are allowed:
 - a. The clustering of required plant materials is allowed to reduce the removal of existing site improvements if the required plant count is maintained.
 - b. When necessary to maintain Code dimensions for parking space depth and drive aisle width, the roadway buffer width may be reduced to a minimum of five (5) feet.
 - c. Flexibility in the location of new foundation landscaping is allowed to minimize the removal of existing site improvements and maintain the required parking space and drive aisle dimensions. Foundation landscaping may be located around the existing building and is encouraged to be located around building entrances.
 - d. The number of internal islands may be reduced by one-half (½) in the existing parking area.
6. Any project that proposes an increase in Gross Floor Area (GFA), and/or Vehicle Use Area, of between zero (0) and twenty-five (25) percent of the existing, is required to provide landscaping per Section 701 for the area of the increase (new work).
7. All projects shall be required to replace, previously planted, required landscaping that has died or is not fulfilling its intended purpose (screening, height after two (2) years, hedges with gaps, etc.) to meet the standards in effect at the time of the original approvals, unless such landscaping is no longer required by this code.
8. Incremental increases in either gross floor area or vehicle use area spaces that cumulatively exceed the fifty (50) percent threshold over a three (3) year period shall require the project to meet the standards for new development as shown in Section 701.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

701.8. - Specifications.

A. General.

1. Drought tolerant species.
2. Minimum Florida Number One Grade.
3. Appropriate to soil and climate.
4. Minimum thirty (30) percent native species.
5. Low maintenance.
6. Irrigation shall be zonally designed.
7. Xeriscape-type landscaping is required whenever feasible.
8. Must meet the standards of Section 1002, Visibility Triangles.
9. No synthetic/artificial lawns or plants.
10. All landscaped areas shall be protected by wheel stops or curbing.

11. Areas with planted trees shall be a minimum eight (8) feet wide (inside curb measurement).
12. Existing plant communities designated to remain must be intact and undisturbed; noxious and exotic plants must be removed.
13. Preserving native plant communities is encouraged and may be required, as appropriate.
14. Native plant communities shall be counted at 1.5 ratio for meeting open space requirements (minimum 1/8 acre in size).
15. No parking, loading areas, or buildings shall be placed within any landscape buffers.
16. Trees and shrubs shall not be placed within the middle two-thirds (⅔) of any drainage swale or within three (3) feet measured horizontally from the centerline of the drainage swale; whichever is greater. Swales must allow the positive flow of water without any obstruction.
17. A maximum of forty (40) percent of all required trees may be palm trees. When palm trees are utilized as canopy trees, a minimum of two (2) palms must be grouped to serve as a canopy tree. Each palm tree group will count as one (1) canopy tree.

B. Trees. Trees required under Section 701 shall be in accordance with the following:

MINIMUM SIZE AT PLANTING	CANOPY	UNDERSTORY	PALM
Height	10 Feet	6 Feet	15 Feet
Caliper	2½ Inches	1½ Inches	
Spread	4 Feet		

C. Shrubs. Shrubs required under Section 701 shall be in accordance with the following:

MINIMUM SIZE AT PLANTING	HEDGE	VEHICLE USE AREA ISLANDS
Height	24 Inches	8 Inches
Gallons	3 Gallons	1 Gallon

D. Prohibited Species. Prohibited Plant Species. The following plant species shall not be planted in Manatee County:

1. Melaleuca quinquenervia (commonly known as Punk tree, Cajeput, paper bark, malaleuca);
2. Schinus terebinthifolius (commonly known as Brazilian Pepper or Florida Holly);
3. Casuarina species (commonly known as Australian Pine);
4. Rhodomyrtus tomentosa (commonly known as Downy Rose Myrtle);
5. Mimosa pigra (commonly known as the Catclaw Mimosa);
6. Dalbergia sissoo (commonly known as the Indian Rosewood); and
7. Cupaniopsis anacardioides (commonly known as the Carrotwood).

E. Nuisance, Exotic Plant Species Management. All nuisance, exotic plant species shall be removed from upland portions of land development sites during construction except as noted below. An Exotic Plant Species Management Plan shall be approved by the Department Director prior to or concurrent with Final Site Plan or Construction Plan approval. The management plan shall provide for the continued, phased, removal of nuisance, exotic plant species that become reestablished within common areas of a residential development and open spaces within non-residential projects, for the life of the project.

Nuisance, exotic plant species removal may be modified by the Department Director, provided that an Exotic Species Management Plan is approved to minimize the expansion and establishment of exotic plant species outside of the approved post-development configuration. Modifications may be approved as follows:

1. Specific locations of redevelopment projects, where existing nuisance, exotic vegetation is acting as a screen to assure compatibility or protection of the existing land use.
2. Development sites where removal of nuisance, exotic vegetation cannot be phased, or will result in costly and extreme soil stabilization measures.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

8/20/2020

Manatee County, FL Land Development Code

701.9. - Modifications.

Department Director may approve alternative screening/landscaping upon determining the plan meets the intent of the standards and meets or exceeds a plan in strict compliance.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

701.10. - Landscape Plan Required.

A landscape plan shall be submitted, reviewed and approved by the Department Director at the Preliminary and final site plan stages, or prior to the issuance of a building or access and drainage permits. These plans should be integrated into the site plans/plats submitted, and shall be prepared by a landscape architect or other persons as authorized under F.S. ch. 481, Part II. The landscape plan shall consist of:

- A. Date, scale, north arrow, and the names, addresses, and telephone numbers of both the property owner and the person preparing the plan;
- B. Location of existing boundary lines and dimensions of the site, the zoning classification of the site, and the zoning classification of adjacent properties. A vicinity map should also be attached to or made a part of the plan;
- C. Approximate centerlines of existing water courses and the location of the twenty-five (25) year and one hundred (100) year floodplain, if applicable; the approximate location of significant drainage features; and the location and size of existing and proposed buildings, streets, utility easements, driveways, parking, sidewalks, and similar features;
- D. Project name, street address, and legal description;
- E. Location, height, and material of proposed screening and fencing (with berms to be delineated by one (1) foot contours);
- F. Locations and dimensions of proposed landscape buffers, areas, and cross section;
- G. Complete description of plant materials shown on the plan, including names (common and botanical name), locations, quantities, container or diameter breast height sizes at installation, heights, spread, method of irrigation (as shown in Section 701.11) and spacing. The location and type of all existing trees on the lot over four (4) inches in caliper or greater must be specifically indicated;
- H. Calculations as to the amount (in square feet) of vehicle use and foundation landscape areas required and provided;
 - I. An indication of how existing healthy trees proposed to be retained will be protected from damage during construction;
 - J. Size, height, location and material of proposed seating, lighting, planters, sculptures, and water features;
- K. A plan drawn to scale showing in addition to the above items the location of roads, sidewalks, buildings, landscape areas and buffers, planters, drainage facilities, easements, property lines and fences;
- L. Location of visibility triangles on the site (if applicable), including visibility triangle within parking areas;
- M. Other information as may be required by the Department Director to determine whether the landscape plan meets the requirements of this Code; and
- N. Preliminary Site Plan Requirements. Items to be included within a landscape plan submitted in conjunction with a preliminary site plan are: proposed general types of plant materials, general location of landscaping in vehicle use areas, foundation landscaping areas, screening buffers and roadways buffers. One hundred (100) percent automatic irrigation shall be noted.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)

Editor's note— See the editor's note to § 701.4.

701.11. - Irrigation.

- A. **Irrigation Design Standards.** One hundred (100) percent automatic irrigation systems shall be required for all projects. The following standards shall apply to the design, installation and maintenance of the irrigation systems. Single-family and duplex dwellings, if an automatic irrigation is installed, shall provide rain or moisture sensing shut-off devices.
 1. Existing plant communities and ecosystems maintained in a natural state do not generally require supplemental irrigation.
 2. Rain or moisture sensing shut-off devices shall be installed with any irrigation system. Drip or microjet irrigation shall be used where possible. Low trajectory spray nozzles are encouraged.
 3. All irrigation systems shall use the lowest quality water available which adequately and safely meets the water needs of the system. Stormwater reuse, reclaimed water use and grey water irrigation systems shall be used where feasible. Shallow wells and wet retention/detention ponds shall also be in used as an alternative to potable water.
 4. The applicant shall provide an irrigation plan that shall show the location of the water source and size of well (if applicable), backflow preventer (if applicable), the location of irrigation heads, drip lines, water lines or other items that will show that one hundred (100) percent automatic irrigation is serving all required landscape areas on the plan.
- B. **Irrigation Within the Right-of-Way.** Property owners wishing to maintain landscaped areas in the rights-of-way contiguous with their property and adjacent to the paved road or sidewalk may, with the following stipulations, install underground irrigation lines and sprinkler heads within these areas:

8/20/2020

Manatee County, FL Land Development Code

1. When the County or any other utility with legal easements, needs to cut or remove parts of said irrigation system, or damages same as a result of rights-of-way, it shall be the property owner's responsibility to repair and/or replace those damaged areas of the system, and all costs shall be borne by the property owner.
2. No portion of any irrigation system shall be installed within the right-of-way without a Right-of-Way Use Permit. Any spray heads or nozzles located adjacent to the rights-of-way shall be directed away from all travel lanes and sidewalks. All such systems shall be designed so that water being applied to impervious surfaces is reduced or eliminated.
3. The irrigation system shall be properly maintained and operated consistent with County-wide watering schedules.
4. For public health, safety and welfare reasons, the County may rescind any approval and cause removal of any irrigation line within the rights-of-way, without notice, cause or reimbursement, to the property owner.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)Editor's note— See the editor's note to § 701.4.

701.12. - Installation and Maintenance of Landscape and Irrigation.

- A. Installation shall be complete at the time of final inspection, except as provided otherwise.
- B. Property owner shall maintain landscaping and screening for the life of project.
- C. Required plant materials which are removed or die shall be replaced within thirty (30) days.
- D. Understory growth and the natural function of the area shall be maintained.
- E. Installation shall be in a sound, professional manner.
- F. Required landscaping shall be maintained and pruned in a manner that preserves the natural shape and growth characteristics of the species. Pruning that "hatracks" or "lollipops" canopy trees is prohibited without prior approval of the Department Director or Board.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)Editor's note— See the editor's note to § 701.4.

701.13. - Certification Required.

Prior to issuance of a Certificate of Occupancy or approval of a final plat, (as applicable), the landscape professional responsible for the project shall provide written, sealed or notarized, certification to the Engineer of Record that the installation of irrigation and landscaping has been completed in accordance with the approved plan or plat. The Engineer of Record shall provide a copy of the landscape professional's certification with submittal of his/her certification.

(Ord. No. 19-03, § 3(Exh. A-7), 3-21-19)Editor's note— See the editor's note to § 701.4.

Section 702. - Earthmoving.

702.1. - Purpose.

The purpose and intent of this Section is to ensure safe and environmentally adequate design and reclamation of all disturbed lands; and to protect all property during excavating, filling, and off-site transporting of material in the process of earthmoving.

702.2. - Exemptions.

- A. The earthmoving operations listed under subsection B shall not require a separate earthmoving site plan or operating permit provided:
 1. No off-site drainage is affected;
 2. No rise in the base flood elevation of an identified floodway;
 3. No change in grade at the property line (except for swales); and
 4. All other state and local requirements have been fulfilled. Although an earthmoving permit may not be required, a tree removal permit under Section 700 may be required. If the site is located within the floodplain, the provisions of Section 802, Floodplain Management shall apply.
- B. The activities eligible for exemptions are:
 1. Earthmoving which is accessory to agricultural operations where no earth is transported off-site.
 2. Site preparation and finish grading for or accessory to Permitted Uses or other Conditional Uses, which are specifically identified and approved during another developmental permit approval.
 3. Earthmoving which is a part of a county approved construction project, such as a subdivision, or a dredge and fill project.
 4. Earthmoving for the preparation of a site, foundation, and landscaping of a single family detached, attached dwelling unit, or duplex located on a lot of record.

Sec. 4.661. - General requirements.

- 4.661.A. *Purpose and intent.* The purpose and intent of this division is to promote the health, safety and welfare of existing and future residents by establishing minimum standards for the installation and continued maintenance of landscaping and buffering without inhibiting creative landscape design. This division requires specific water conservation measures including the preservation of native vegetation for landscaping purposes where applicable to minimize water use, conserve energy, limit nutrient loading to surface waters, and provide mature vegetation for aesthetics, shade and wildlife habitat. The specific objectives of these regulations are to: preserve and protect existing vegetation; promote water conservation and encourage greater use of native cold-tolerant and drought-tolerant landscape material; reduce heat and glare; provide temperature control; to improve the appearance of developed areas; enhance the value and appearance of local properties by more effectively buffering land uses; reduce air and noise pollution; improve the aesthetic appearance of all development by requiring sustainable landscaping and buffering that harmonizes and enhances the natural and built environment; and to reduce or minimize potential nuisances between land uses.
- 4.661.B. *Applicability.* Except as set forth below a certificate of occupancy shall not be granted for any use, structure or development within the unincorporated area of the County until all requirements of this division are met.
1. Construction of a single-family or duplex residence shall require the planting of one tree per three thousand square feet of site area and those trees shall comply with the standards set forth in section, 4.664, LDR. Single-family and duplex residences shall also comply with section 4.664.A.3. requiring the removal of prohibited species. Single-family and duplex residences shall be exempt from all other requirements of this division. The enlargement or repair of single-family or duplex units shall be exempt from this division.
 2. Administrative amendments to approved development orders pursuant to section 10.14 LDR shall not be required to provide a landscape plan unless the proposed amendment would substantially affect the existing landscaping.
 3. Removal of exotic, dead or diseased vegetation shall be exempt from this division.
 4. Land used and permitted for agricultural use by the Comprehensive Growth Management Plan shall be exempt from this division.
- 4.661.C. *Glossary.* For the purposes of this division the following words, terms and phrases shall have the meanings set forth below:

Adverse impact: Any direct or indirect effect likely to cause, or actually causing, a decline in the stability, natural function, or natural diversity of any environmental resource or system, or in the quiet, peaceful, safe, or healthful use or occupancy of any off-site property.

Bufferyard: A landscaped area intended to separate and partially obstruct the view of two adjacent land uses or properties from one another.

Building area: That portion of a site upon which a structure exists or may legally be constructed.

Caliper: The diameter of a tree, which shall be measured 12 inches above the soil line for trees required to have a four-inch or greater caliper; or, for smaller trees, which shall be measured six inches above the soil line, except that grafted trees shall be measured one inch above the graft union if union can be seen.

Canopy road tree protection zones: All lands within 100 feet of the centerlines of existing roads where trees form a continuous canopy over the roadway are to be treated as canopy road tree protection zones.

Commercial building: Any nonresidential development conducted in the general commercial, limited commercial, commercial office/residential or waterfront commercial future land use designations.

Crown: The main point of branching or foliage of a tree or plant, or the upper portion of a tree or plant.

Crown spread: The distance measured across the greatest diameter of the crown of a plant or a tree.

 **DBH:** Diameter at breast height; the diameter of a tree measured at a height of 54 inches above the naturally occurring ground level.

Developed area: That portion of a site upon which any building, structure, pavement, landscape material, stormwater facility, excavated lake, or other improvement has been or will be placed or on which a development activity occurs or has occurred.

Drip-line: The vertical projection on the ground of the outer perimeter of the crown of a plant.

EcoArt: EcoArt is an intentional aesthetic construction or assemblage designed by an artist. EcoArt incorporates environmental science in its design and is intended to communicate ecological principles. An EcoArt project could be a naturally regenerative ecosystem that supports and enriches biodiversity, provides storage, filtration, habitat, energy attenuation and absorption, etc. and or it can be an architectural structure that provides many of the same benefits. EcoArt projects can provide ecologically positive benefits to disturbed and impaired areas and the built environment.

Exotic vegetation: A plant that is a nonnative species.

Good forestry practices: Activities which reduce excessive competition between trees, or which remove intrusive exotic species and replace with native species.

Ground cover: Low-growing plants other than turf grass or deciduous varieties, generally reaching a maximum height of not more than 24 inches at maturity, installed to form a continuous cover over the ground.

Interior area: The entire parcel to be developed exclusive of the required front, rear, and side perimeter landscape areas.

Landscape material: Living material, including trees, shrubs, vines, turf grass, and ground cover; landscape water features; and nonliving durable material commonly used in landscaping, including mulch, walls and fencing, rocks, pebbles, sand, prairie film, brick pavers, and earthen mounds, but excluding impervious surfaces for vehicular use.

Landscaping: The placement of landscape material on a site in accordance with the requirements of this division.

LDR means the Martin County Land Development Regulations.

Mulch: Organic or inorganic materials which may have been shredded, cut, or pulverized to facilitate the spreading on the soil surface for the purpose of protecting the roots of plantings, conserving soil moisture, suppressing weed growth, and changing the aesthetic appearance of a landscape area.

Native: A species that occurred in Florida at the time of European contact or 1500s or as identified as a native plant in the *Guide to the Vascular Plants of Florida* by R. Wunderlin and B. Hansen.

On-site: Within the boundaries of a facility location, property or site including those sites separated by public or private rights-of-way.

Opaque: Obscure as to be visually unintelligible.

Open space: Land open and unobstructed from the ground to the sky, excluding areas covered by excavated lakes, buildings, sidewalks, patios, parking and loading areas, driveways or other impermeable structures or manmade surfaces. Where pervious parking is provided only those pervious spaces which are in excess of the number required will qualify as open space.

Preserve area: Portions of a site that are to be protected from any tree or understory removal (except for the removal of noxious or exotic vegetation as approved by a preserve area management plan (PAMP) and maintained without any development.

Qualified professional: A person who possesses, in addition to skill, a special registration, or certification, or knowledge which is obtained by an accredited four-year college degree, and which is inherently or legally necessary to render him or her capable, competent, and eligible to perform the particular responsibilities.

Service function areas and mechanical equipment: Outdoor equipment serving development including but not limited to electrical or transformer boxes, air conditioning units, duct work, telecommunication equipment, generators, propane tanks, solid waste collection areas and utility equipment.

Shade tree: Any self-supporting woody plant of a species, deciduous or nondeciduous, that is generally well-shaped, well-branched, and well-foliated which normally grows to an overall minimum height of 35 feet with a minimum average mature crown spread of 30 feet, and which is commonly accepted by local horticultural and arboricultural professionals as a species which can be expected to survive for at least 15 years in a healthy and vigorous growing condition over a wide range of environmental conditions.

Shrub: A woody perennial plant differing from a perennial herb by its persistent and woody stems and from a tree by its low stature and habit of branching from the base.

Sight triangle: An area of unobstructed sight distance along both approaches of an access connection.

Site: The total area within the property boundaries of a principal parcel to be developed, or contiguous parcels intended for development under a common scheme or plan.

Tree: Any self-supporting woody plant having one well-defined stem a minimum of two inches DBH, and which normally grows to a minimum average height of 20 feet.

Tree credit: A numerical representation of the value of a two-inch DBH ten-foot high tree, used to assign values to trees of various sizes to calculate either credit against reforestation requirements, as in the case of trees protected during the development process, or to determine the extent of replanting required, as in the case of removal of protected trees.

Tree removal: The actual removal of a tree; any unmitigated development impact to 25 percent or more of the critical protection zone of a protected tree; any encroachment within three-fourths of the radius of the critical protection zone of a protected tree; any damage to 30 percent or more of the crown of a protected tree within the vertical projection of its critical protection zone; or any other action or activity likely to damage a protected tree.

Turf or Turf grass: A mat layer of monocotyledonous plants such as, but not limited to, Bahia, Bermuda, Centipede, Paspalum, St. Augustine, and Zoysia.

Underbrushing: The removal of understory vegetation, either by hand or with the use of equipment, which neither disturbs the soil nor causes the destruction of any tree.

Understory: The complex of woody, fibrous, herbaceous, and graminoid plant species that are typically associated with a natural forest community.

Vehicular use area: Any ground surface area, excepting public rights-of-way, used by any type of vehicle, whether moving or at rest, for such purposes as driving, parking, loading, unloading, storage, or display, including new or used car lots; activities of a drive-in nature in connection with banks, restaurants, filling stations, grocery and dairy stores, and other vehicular uses under, on, or within buildings.

Vines: Any group of woody or herbaceous plants which may climb by twining, or which normally require support to reach mature form.

Visual screen: A barrier of living or nonliving landscape material which separates and obscures an area from view.

(Ord. No. 601, pt. 1, § 4.15.1, 10-2-2001; Ord. No. 930, pt. 2, 6-11-2013)

Cross reference— Rules of Interpretation, § 1.5.

Sec. 4.662. - Application requirements.

4.662.A. *Landscape plan.* Except as provided in section 4.661, all development applications shall include a landscape plan prepared by a qualified professional in accordance with F.S. § 481.301 et seq., and indicate the location and type of all

existing and proposed:

1. Property boundaries, land use, rights-of-way and easements.
2. On-site and abutting land use features, including adjacent sidewalks, existing vegetation, natural features and site improvements within 50 feet of the property.
3. Buildings, structures, paving, and adjacent buildings within 50 feet of the property.
4. All overhead, above and underground utilities, including septic tank and drain fields.
5. Off-street parking, access aisles, driveways and other vehicular use areas.
6. Surface water bodies and wellfields.
7. A tree survey, including approximate position of protected trees, protected tree clusters, landscaping and other vegetation to be preserved or removed.
8. Plant installation methods and irrigation sources.
9. The location and acreage of all areas designated for development and preservation.
10. Ditches, swales, stormwater treatment structures or slopes exceeding 3V:1H in any proposed landscape area.
11. Tabular data summary: required quantities of plant materials, identification of Florida native plant species provided, gross and net acreage, acreage of preserve areas, number of trees and tree clusters to be protected within the developed area and within perimeter areas, and square footage of vehicular use areas. Service function areas and mechanical equipment requiring screening shall be summarized in a table to identify equipment and the type of screening proposed. Tabular data shall also indicate a calculation of the minimum total number of trees and shrubs required to be planted based upon the proposed developed area and separately based upon quantities required to meet the vehicular use area planting requirements and any required bufferyard requirements.

4.662.B. *Irrigation plans.* Irrigation systems are not required; however all required plantings must remain viable, healthy, neat and orderly in appearance. If an irrigation system is to be installed, irrigation plans shall be submitted with the certificate of completion prepared by a landscape architect prior to certification of occupancy is granted. The landscape architect, licensed plumbing contractor or licensed irrigation sprinkling contractor shall certify that irrigation plans shall meet or exceed the minimum compliance regulations set forth within the Standards and Specifications for Turf and Landscape Irrigation Systems published by the Florida Irrigation Society as amended. The required irrigation plan shall be prepared by a qualified professional and shall include the following minimum information:

1. A scale: same as site plan.
2. Water main: location size and specifications.
3. Valve(s): location(s), size and specifications.
4. Pump(s): location(s), size and specifications or water source.
5. Backflow-prevention devices and locations.
6. Controller(s): location(s) and specifications (rain-sensor override devices are required for sprinkler systems).
7. Typical irrigation zone plan: indicate head types, specifications and spacing, and separate zoning details for different types of irrigation heads and a calculation of percent area irrigated.
8. Total volume: gallons required for typical depths of application and application rate, inches per hour.
9. Reclaimed water irrigation system: if applicable, and whether the system is temporary or permanent.

(Ord. No. 601, pt. 1, § 4.15.2, 10-2-2001; Ord. No. 794, pt. 1, 3-18-2008; Ord. No. 930, pt. 2, 6-11-2013)

Cross reference— Development review procedures, art. 10.

Sec. 4.663. - Landscape design standards.

4.663.A. *General requirements.* The following minimum landscaping and tree planting requirements shall apply.

1. *Required landscape area.* At least 20 percent of the total developed area shall be landscaped.
2. Credit towards landscape area requirements may be allowed for all or part of native habitat in addition to upland

preserve area requirements, provided the applicant demonstrates to the satisfaction of the Director of Growth Management that the native area claimed for credit includes one or more of the following:

- a. Tree clusters including native vegetative communities, protected from development impact.
 - b. Vegetative areas with native understory flora, protected from development impact.
 - c. Protected trees.
 - d. Constitutes a perimeter buffer along any roadway, parking lot or adjacent property.
3. Trees shall be planted in accordance with the following minimum requirements:
 - a. All multifamily developments shall provide at least one tree per 1,500 square feet of site area.
 - b. All nonresidential developments shall provide at least one tree per 2,500 square feet of site area.
4. *Vehicular use area requirements for nonresidential sites.* The following landscaping requirements shall apply within vehicular use areas.
 - a. Landscaping shall be provided along the perimeter of vehicular use areas in accordance with the following standards:
 - (1) A ten-foot wide strip of land, exclusive of curbing, along the entire front perimeter of a site, located between the front property line and any vehicular use area, shall be landscaped. Width of sidewalks shall not be included within the ten-foot wide front perimeter landscape area. Berming is encouraged along public roadway frontages to screen parking areas and provide visual interest.
 - (2) A ten-foot wide strip of land exclusive of curbing along the entire side and rear perimeter of a site, located between the side and rear property lines and any vehicular use area, shall be landscaped. When side or rear perimeter landscape areas are required on adjacent properties, the owners of such adjacent properties may agree to the installation of only one such landscape area on the adjacent boundary, as long as such agreement is binding on both property owners and their successors in interest and is approved as part of the permit application.
 - (3) The total tree requirement within the perimeter landscape area shall be determined by using a ratio of one tree for each 30 linear feet of required landscape perimeter area, or one tree for every 300 square feet of planting area or major portion thereof, with no less than 75 percent of said trees being shade trees. This provision is not intended to require trees to be equally spaced 30 feet apart. Creative design and spacing is encouraged.
 - (4) Shrubs with 15 to 23 inches of spread shall be planted on three foot centers; shrubs with greater than 23 inches of spread shall be planted on five-foot centers. In no event shall spacing exceed five feet on center, nor shall plants be closer than two feet to the edge of any pavement.
 - (5) A minimum of 25 percent of the total perimeter landscape area is to be in native plantings.
 - (6) Vehicle stops or other design features shall be used so that parked vehicles do not overhang into landscape areas.
 - (7) Separation between any one-way drives shall be no less than ten feet.
 - (8) Until such time as the Engineering Department develops minimum sight distance triangles at intersections, sight distance triangles at intersections shall at a minimum conform with the requirements of the Florida Department of Transportation. The County Engineer may impose an additional distance requirement if the conditions of an intersection warrant such treatment based on Martin County engineering standards and/or good engineering practices. Objects within the sight triangle shall not exceed 24 inches in height with the exception of traffic control devices and utility structures. Trees having limbs and foliage trimmed so the cross-visibility within the triangle is not obscured shall be allowed to overhang the sight triangle, provided the location of any tree does not create a traffic hazard.
 - b. Landscaping shall be provided within the interior of vehicular use areas in accordance with the following standards:

NEW BUSINESS #2

- (1) In vehicular use areas within the interior of a site, one 500-square-foot planting area shall be required for every 1,000 square feet of vehicular use area, or major portion thereof, and at least three two-inch, or two three-inch caliper shade tree landscape material shall be planted within each such planting area. Interior landscape areas shall be located to break the monotony of large expanses of paving and contribute to orderly circulation of vehicular and pedestrian traffic. Linear medians more than 12 feet in width, exclusive of curbing. Whenever linear medians at least 50 feet long having shade trees are used, the minimum width may be reduced to eight feet exclusive of curbing.
 - (2) Landscaped terminal islands of not less than ten feet in width exclusive of curbing and 18 feet in length shall be provided at each end of a parking row. Where divider medians are eliminated (see (3) below), terminal islands shall be increased by an area equal to the divider median requirement. At least one tree shall be planted in every island. Terminal islands shall not be used as stormwater management or conveyance facilities.
 - (3) Landscaped interior medians of at least six feet in width exclusive of curbing shall be provided between an interior row of parking spaces and an abutting interior driveway or between abutting rows of parking spaces. At least one tree shall be required for every 30 linear feet of interior median, planted singly or in clusters with tree locations not more than 60 feet apart. Divider medians shall not be used for interior stormwater management or conveyance facilities. The elimination of divider medians for up to three bays of parking shall be allowed with the transfer of an equal square footage of landscaped area into terminal islands located along a public roadway. Public parks are allowed to utilize divider medians for stormwater management or conveyance purposes where the medians are a minimum of ten feet in width.
 - (4) Landscaped interior islands shall measure not less than five feet in width exclusive of curbing and 20 feet in length and may be reduced five feet less than the required parking space length. Such islands shall be placed within rows of parking spaces so that there is at least one interior island for every ten parking spaces or portion thereof. At least one tree shall be required per island with the remainder of the island landscaped with grass, ground cover, mulch, shrubs, or other treatment excluding pavement or sand according to the provisions of this section. Interior islands shall not be used for stormwater management or conveyance facilities.
 - (5) As an incentive to preserving native areas, up to one-half of the required interior landscape area may be waived when an equal area within the vehicle use area is preserved in a native state. To qualify for such a waiver, preserved native areas must be at least 800 square feet in size. The area must not be altered by grade changes or irrigation impacts which may stress the vegetation in its existing habitat. Such native areas that are used to meet landscaping requirements, shall not be used to meet upland preservation requirements.
5. For vehicular use areas not utilized for off-street parking, but serving the vehicular access or storage needs of the public (stacking lanes for drive-in banks and restaurants), ten percent of the total paved area of such vehicular use area shall be added to interior landscaping.
 6. *Screening of service function areas.* Screening materials and landscaping used to screen service function areas shall be consistent with the design of the primary facades.
 - a. Solid waste collection areas. The location of all trash, recycling and similar receptacles, including dumpsters, shall be screened with an opaque, six-foot-high masonry wall or fence. A hedge shall be installed around the perimeter of this screen. Where possible, dumpsters shall be sited so as not to be visible from public rights-of-way. Opaque gates shall be used to screen trash receptacles from the view of public rights-of-way. Property served by residential curbside service shall be exempt from the provisions of this requirement.
 - b. Service function and mechanical equipment areas. Landscape plans shall clearly identify the locations of service function and mechanical equipment that are required to be screened and the type of screening provided. These areas shall be enclosed by an opaque fence, wall or hedge a minimum of six feet in height or

to the highest point of the equipment, whichever is lower. For air conditioning or other equipment requiring air flow, a lattice screen of at least 50 percent opacity shall be sufficient to meet this requirement.

7. *Commercial building requirements.* Landscape plans shall identify the square footage (gross floor area) of commercial buildings and the locations of pedestrian access and customer entrances to these buildings. Structural or vegetative shading shall be provided along pedestrian ways at intervals of no greater than 70 feet. Pedestrian amenities shall be provided for all commercial buildings greater than 10,000 square feet, as follows:
- Commercial buildings greater than 10,000 square feet.* Commercial buildings of more than 10,000 square feet in gross floor area shall provide an outdoor patio area adjacent to the customer entryway of a minimum of 200 square feet in area. Plans shall identify required bench/seating locations in required outdoor patios or pedestrian arcades next to customer entryways. Benches shall not be less than six feet in length and shall have either structural or vegetative shading identified on the plans. Required decorative landscape planters shall also be identified on the plans in these locations.
 - Commercial buildings greater than 50,000 square feet.* The requirements are the same as listed above for commercial buildings greater than 10,000 square feet, with the exception that a minimum of two benches shall be provided.
 - Commercial buildings greater than 100,000 square feet.* The requirements are the same as listed above for commercial buildings greater than 10,000 square feet, with the exception that a minimum of four benches shall be provided. Additionally, the location of a required outdoor fountain for these buildings shall be provided on the plans.

4.663.B. *Bufferyard requirements.* To reduce potential incompatible relationships between adjacent land uses, landscaped bufferyards shall be required between differing land uses and along certain transportation corridors. However, pedestrian and vehicular connections shall be encouraged between like uses (i.e., commercial, outparcels to adjacent outparcels along major thoroughfares) whenever possible. It is the intent of this provision to encourage the preservation of existing vegetation for use in buffers as opposed to clearing and replanting designed landscapes. The following landscaped bufferyards shall be required for all new development or redevelopment which creates the indicated land use conflicts.

1. *Bufferyards for differing land uses.*

a. *Bufferyard type.* The following table indicates the type of bufferyard required between various land uses.

Proposed Use		Adjacent Use											
		A	B	C	D	E	F	G	H	I	J	K	L
A	Single-family residential	—	1	1	1	2	3	3	4	2	4	2	4
B	Mobile home residential	1	—	1	1	2	3	3	4	1	4	2	4
C	Multifamily residential	1	1	—	1	2	3	3	4	1	4	2	4
D	Commercial office	1	1	1	—	—	1	2	3	—	2	—	—
E	Limited commercial/waterfront resort	2	2	2	—	—	1	1	1	1	1	—	—
F	General commercial/waterfront general	3	3	3	1	1	—	—	—	2	—	—	—
G	Limited industrial	3	3	3	2	1	—	—	—	2	—	1	—
H	Industrial	4	4	4	3	1	—	—	—	3	—	2	1
I	Agricultural ranchette	2	1	1	—	1	2	2	3	—	1	—	3
J	Agricultural	4	4	4	2	1	—	—	—	1	—	2	1
K	Institutional recreational / administrative (e.g., libraries, offices).	2	2	2	—	—	—	—	2	—	2	—	—
L	Institutional general	4	4	4	—	—	—	—	1	3	—	—	—

- b. *Determination of use.* Proposed use types shall be those indicated on a development application or the most intensive use permitted by existing zoning or the Comprehensive Growth Management Plan. The adjacent use shall be based on existing development, an approved development plan or the least intensive use permitted

by existing zoning or the Comprehensive Growth Management Plan. In no case shall the existence of a nonconforming use on adjacent property work to impose a greater bufferyard requirement than the least intensive use permitted by existing zoning or the Comprehensive Growth Management Plan.

2. *Bufferyards for residential uses along major transportation corridors.*

- a. *Residential bufferyards.* Wherever new residential dwelling units are proposed to be located along any minor or major arterial road, specifically excluding community redevelopment overlay districts adopted pursuant to Article 3, Division 6, of the Land Development Regulations, a Type 5 bufferyard shall be required to screen the view of the dwelling units from the street. The major or minor arterial road classifications are described in section 4.842 of the Land Development Regulations. This requirement shall be applicable only to areas within the Primary Urban Service District as shown on figure 4-5 of the Comprehensive Growth Management Plan.
- b. *Screening of construction sites.* Despite any provision to the contrary elsewhere in this Division 15, residential bufferyards required by paragraph 2.a (above) shall be installed no later than 60 days after commencement of any site clearing. The Growth Management Director may modify this requirement where the applicant can demonstrate that the land clearing activities will not be readily visible from a minor or major arterial street or because a temporary or permanent source of landscape irrigation cannot reasonably be installed until later in the development process. Any modification of this requirement shall be the minimum necessary to overcome the particular limitations of the site, but in no case shall vertical construction of residential buildings commence until the required bufferyard is installed.
- c. *Implementation.* The provisions of paragraph 4.663.B.2 shall apply to all new residential development except where a final site plan was approved prior to January 1, 2008. Residential projects which are being developed as part of the implementation of a master site plan approved prior to January 1, 2008 shall comply with the provisions of paragraph 4.663.B.2 to the maximum extent practicable, as determined by the final decision-maker for the development (the County Administrator or the Board of County Commissioners, as appropriate). For example, if the approved master site plan includes an area which could accommodate a bufferyard without reducing the number of lots or residential units proposed:
 - (1) The final decision-maker may require either the full buffer or a modified version of the buffer, depending upon the amount of area available within that particular portion or phase of the development; and
 - (2) A revised master site plan shall not be required to implement this requirement.

3. *Bufferyards for residential uses along railroad rights-of-way.*

- a. *Residential bufferyards.* Wherever new residential dwelling units are proposed to be located along any railroad rights-of-way, specifically excluding community redevelopment overlay districts adopted pursuant to Article 3, Division 6, of the Land Development Regulations, a Type 5 bufferyard shall be required to screen the view of the dwelling units from the railroad rights-of-way. This requirement shall be applicable only to areas within the Primary Urban Service District as shown on figure 4-5 of the Comprehensive Growth Management Plan.
- b. *Implementation.* The provisions of paragraph 4.663.B.3 shall apply to all new residential development. Residential projects which are being developed as part of the implementation of a master site plan approved prior to January 1, 2014 with a valid timetable of development shall comply with the provisions of paragraph 4.663.B.3 to the maximum extent practicable, as determined by the final decision-maker for the development (the County Administrator or the Board of County Commissioners, as appropriate). For example, if the approved master site plan includes an area which could accommodate a bufferyard without reducing the number of lots or residential units proposed:
 - (1) The final decision-maker may require either the full buffer or a modified version of the buffer, depending upon the amount of area available within that particular portion or phase of the development; and
 - (2) A revised master site plan shall not be required to implement this requirement.

4. *Bufferyards for public parks and recreation areas, active and passive.*

- a. Active recreation facilities (such as tennis courts and sports fields) shall provide a Type 4 landscaped buffer

along the border of any RE, RS, RM, MH, residential PUD or Category "B" zoning district.

5. *Bufferyards for uses adjoining conservation lands.* Proposed development abutting land with a Conservation Future Land Use designation shall provide the following intensity and density transition area to enhance protection of the wildlife populations and natural systems.
- a. A preservation area as defined in Divisions 1 and 2 of this article, provided all requirements of Divisions 1 and 2 of this article, and this division are met.
 - b. Stormwater retention areas, a minimum of 50 feet in width, planted with native littoral and upland transition vegetation may be provided to meet the requirements of this section. Littoral and upland transition vegetation shall be planted on the side of the stormwater pond abutting the conservation land use.
 - c. Where an applicant can demonstrate that a preservation area or stormwater retention area cannot be provided adjacent to conservation lands, as described above, a Type 5 native bufferyard shall be provided. Optionally, a Type 3 native bufferyard incorporating an EcoArt element may be approved by the Growth Management Department Director.
 - d. All bufferyard vegetation shall be comprised of native plants and all existing native vegetation shall be retained and incorporated into the bufferyard. Fire resistant plant species shall be utilized in the native firewise landscape bufferyard.
 - e. Regardless of the technique selected, the following activities shall be prohibited:
 - (1) Altering the hydrologic regime or lowering the water table;
 - (2) Generating, storing or handling of hazardous wastes;
 - (3) Generating nuisance noise, dust, lighting or odors;
 - (4) Generating high concentrations of excessive nutrient runoff.
6. *Description of bufferyard types.*
- a. *Type 1 bufferyard:* A 20-foot-wide landscape strip with a six-foot-high, opaque fence or wall. At least one tree and ten shrubs shall be provided for every 300 square feet of required bufferyard. Trees must be at least ten feet in height with a two-inch caliper. A six-foot-high vegetative landscape screen consisting of 28 shrubs provided for every 250 square feet of required bufferyard can be substituted for the shrub, fence, wall or berm requirements. This vegetative landscape screen shall be 100 percent opaque at the time of planting.
 - b. *Type 2 bufferyard:* A 25-foot-wide landscape strip with a six-foot-high opaque fence or wall. At least one tree and ten shrubs shall be provided for every 300 square feet of required bufferyard. Trees must be at least ten feet in height with a two-inch caliper. A six-foot-high vegetative landscape screen consisting of 28 shrubs provided for every 250 square feet of required bufferyard can be substituted for the shrub, fence, wall or berm requirements. This vegetative landscape screen shall be 100 percent opaque at the time of planting.
 - c. *Type 3 bufferyard:* A 30-foot-wide landscape strip with a six-foot-high opaque fence or wall. At least one tree and 34 shrubs shall be provided for every 300 square feet of required bufferyard. Trees must be at least 14 feet in height with a three-inch caliper and staggered for maximum opacity.
 - d. *Type 4 bufferyard:* A 40-foot-wide landscape strip with a six-foot-high opaque fence, wall or berm. At least one tree and 34 shrubs shall be provided for every 300 square feet of required bufferyard. Trees must be at least 14 feet in height with a three-inch caliper and staggered for maximum opacity.
 - e. *Type 5 bufferyard:*
 - (1) A 50-foot-wide landscape strip, with at least three trees and 34 shrubs for every 300 square feet of required bufferyard. The required shrubs shall be a minimum of two feet in height at planting, capable of reaching six feet or more when mature and shall not be trimmed below six feet in height. Trees must be at least 14 feet in height with a three-inch caliper and staggered for maximum opacity; or
 - (2) A 30-foot-wide landscape strip, with at least three trees and 34 shrubs for every 300 square feet of required bufferyard, where 100 percent of such vegetation is made up of native plants and all existing native vegetation is retained. Trees must be at least 14 feet in height with a three-inch caliper and

staggered for maximum opacity. Required shrubs shall be a minimum of two feet in height at planting, capable of reaching six feet in height when mature and shall not be trimmed to below six feet in height.

7. *Requirements for vegetative landscape screens.* Where vegetative landscape screens are installed in required bufferyards, they shall be required to form a solid visual screen at time of planting. A continuous visual screen shall be located along the entire length of all common boundaries. It shall be at least six feet in height and shall incorporate existing native vegetation to the fullest extent possible. When the existing vegetation is inadequate to function as a visual screen, it shall be augmented by two staggered rows of shrub material which will provide such a screen at maturity. Only in cases where the existing vegetation is of poor quality, or totally lacking, shall the visual screen be established solely through the use of the above specified double row of shrubs. Required shrubs shall be a minimum of two feet in height at planting, capable of reaching six feet or more when mature and shall not be trimmed below six feet in height. Existing native vegetation may be used to satisfy screening requirements upon approval of the Growth Management Director.
8. *Use of bufferyards.*
 - a. Utilities, easements, septic drainfields or other physical improvements shall not be placed in bufferyards, unless approved by the Growth Management Director based on good cause shown.
 - b. In any case where an unbuffered view exists within 500 feet from the side or rear service areas of any nonresidential land use to any single-family or two-family residential land use, buffer requirements shall apply as if such residential uses were located on immediately adjacent lands.
 - c. Preserve areas as defined in Divisions 1 and 2 of this article may be used to fulfill the landscape bufferyard requirements of this division, provided, all requirements of Divisions 1 and 2 of this article, and this division are met.
 - d. Bufferyards may not be established on single-family residential lots.
9. *Exceptions.* The following exceptions to and reductions from the bufferyard requirements shall be permitted. The bufferyard width reductions set forth in this paragraph are not intended to reduce the quantity, type or size of plantings required.
 - a. The bufferyard width requirements of section 4.663.B.1 may be reduced by 50 percent for development which is separated from an adjacent use by a public street right-of-way of 60 feet or more in width.
 - b. Where section 4.663.B.1 requires a bufferyard between a residential use and a nonresidential use and such uses are separated by a public street right-of-way of 100 feet or more in width, the buffer requirement shall be reduced to 20 feet.
 - c. Park sites consisting of or surrounded by passive open space with a depth of 50 feet or more along adjacent lot lines shall be exempt from the landscape bufferyard width requirements of this section 4.663.B, but shall be subject to the screening requirements of this section 4.663.B.
 - d. When a mixed use development with a unified master plan and development standards is proposed, the bufferyard requirements may be waived between internal residential and commercial uses where the provisions of section 4.667 are met. Applicable bufferyards are required.
10. It shall be the responsibility of the property owner requesting development approval to install required bufferyards. If a proposed development abuts vacant land not yet approved for development, required bufferyards may be reduced by 50 percent. When the adjacent site develops, this property owner shall be required to install an equivalent bufferyard.

However, in the event any property receives a development order after the effective date of this division that increases the size of the required buffer, that property shall be responsible for providing all of the increase in size of the buffer so that the adjoining property, regardless of whether it is developed, is not obligated to increase the size of its buffer.
11. *Bufferyard fence, wall and berm standards.*
 - a. Whenever a buffer fence is required, it shall be of sufficient height to obstruct view between adjoining

properties, presumably to a height of six feet. The buffer fence shall be solid opaque, constructed of durable materials appropriate for the intended use and consistent with materials commonly used in surrounding neighborhoods, and shall include provision for the access to all landscape materials.

- b. The side of a fence facing a less intensive use and any side of a fence facing a public view shall have a finished appearance to furnish an aesthetically pleasing view.
- c. At least one-half of all required plant materials shall be installed and maintained on the side facing the less intensive use, unless otherwise specifically provided.
- d. Fencing shall be maintained in good repair by the property owner.
- e. When walls are proposed to meet bufferyard requirements, the facade treatment of the walls exceeding 100 feet in length shall require architectural columns at each 100-foot increment to encourage architectural variety and interests.
- f. Fences or walls installed on property near preserve areas shall be designed to permit animal access and crossings.
- g. Berms used in place of the fence or wall requirement shall have no more than a three-foot horizontal to a one-foot vertical slope. Berms may be used in combination with fences or hedges to achieve the minimum six-foot-high 100 percent opaque requirement. For example a three-foot-high fence or hedge may be installed on top of a three-foot-high berm. The six-foot height requirement shall be measured from grade on the side of the buffer with the less intense land use.

4.663.C. *Additional requirements for all landscaped areas.*

1. Mulch material to a minimum compacted depth of three inches shall be allowed for all planting areas when used to supplement ground cover. Cypress mulch is prohibited.
2. Whenever development activity is subject to both the perimeter landscaping requirements and land use bufferyard requirements of this division, the more intensive shall apply.
3. No use shall be made of, and no development activity shall be permitted in, land use buffers and perimeter landscape areas, except for:
 - a. Planting material approved as part of the landscape plan.
 - b. Completely underground utilities and essential, specifically approved, overhead or aboveground utilities which cross these areas and do not interfere with the mature growth of required plant material.
 - c. Grass ditches, with back slopes no steeper than 3:1, which can support the required landscaping materials.
 - d. Pathways of six feet in width between adjacent uses may be allowed.
4. All shrub material used as a part of a dissimilar land use bufferyard shall be a minimum height of 30 inches and have a minimum crown width of 24 inches when planted; shall be species capable of achieving a minimum height of six feet; and shall be located in such a way as to maximize the screening potential.

4.663.D. *Water efficient landscaping.* All development for which landscaping is required shall comply with the requirements set forth below prior to the issuance of a certificate of occupancy. The accompanying points necessary to meet the following water efficiency requirements shall be clearly tabulated on the landscape plan.

1. All development shall attain a minimum of 50 points from the following design options. As used in the following design options, "list" means the list of drought-tolerant species set forth by the South Florida Water Management District as recommended drought-tolerant species for use in landscaping.

	<i>Design Options</i>	<i>Points</i>
a.	Utilization of moisture-sensing controller other than rain-sensor override device.	5
b.	Plan submitted with low, moderate and high water usage zones indicated on the landscape plan.	5
c.	Twenty-five percent to 50 percent of the grass areas are made up of drought-tolerant grass species from the list.	5
d.	Fifty-one percent or more of the grass areas are made up of drought-tolerant grass species from the list.	10

e.	Twenty-five percent to 50 percent of the required shrubs are made up of drought-tolerant species from the list.	5
f.	Fifty-one percent or more of the required shrubs are made up of drought-tolerant species from the list.	10
g.	Twenty-five percent to 50 percent of the required trees are made up of drought-tolerant species from the list.	5
h.	Fifty-one percent or more of the required trees are made up of drought-tolerant species from the list.	10
i.	Twenty-five percent more than the required shade trees planted in the vehicular use area.	5
j.	Fifty percent more than the required shade trees planted in the vehicular use areas.	10
k.	Sod area less than 50 percent of the total landscaped area.	5
l.	Utilization of compacted mulch beds at least three inches deep in all planted areas except ground cover.	10
m.	Utilization of mulch.	5
n.	Utilization of native plant species in stormwater retention areas, other than turf grass or sod. As permitted in <u>Division 9 of Article 4, LDR</u> .	10

2. Adequate irrigation of landscaped areas shall be provided for the first full growing season and continue thereafter only as necessary to maintain required vegetation in good and healthy condition. Irrigation systems shall conform to following standards:

- Irrigation systems shall be continuously maintained in working order and shall be designed so not to overlap water zones or to water impervious areas.
- No irrigation system shall be installed or maintained abutting any public street which causes water from the system to spurt onto the roadway or to strike passing vehicular traffic.
- No permanent irrigation system is required for an area set aside on approved site plans for preservation of existing native vegetation or for drought-tolerant planting areas.

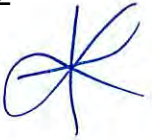
4.663.E. *Preserve area interface requirements for landscaping and stormwater management systems.* A preserve area interface shall be established between required landscaping and stormwater treatment areas and preservation areas when preservation areas exist on a development site and when preserve areas abut a development site. The preserve area interface shall include a consolidation and connection of landscaping and stormwater treatment areas with preservation areas. Where more than one preservation area exists on a development site or abutting a development site multiple preserve area interfaces shall be created. Within the preserve area interface the use of plant materials shall be restricted to native species.

The following preserve area interface criteria shall be documented and met for all development sites where preservation areas are identified and where preserve areas have been identified adjacent to a development site:

- Stormwater management systems.* Plantings within dry retention and detention stormwater areas abutting preserve areas shall be restricted to native trees, native shrubs and native groundcovers. Wet retention and detention stormwater areas abutting preserve areas shall be designed and planted as littoral and upland transition zone areas (preserve area interface) and connected to preserve areas pursuant to Article 4, Division 8, LDR, MCC.
- Perimeter landscaping.* Plantings within perimeter vehicular use landscape areas abutting preserve areas shall be restricted to native trees, native shrubs and native groundcovers pursuant to quantity, size and dimension requirements of section 4.663.A.4., LDR, MCC.

Where an applicant demonstrates that connection of stormwater management systems to a preserve area interface is impractical due to requirements in Article 4, Division 9 or other documentation as approved by the Growth Management Department Director, alternative compliance to this section may be provided. At a minimum, the stormwater management systems will be required to be planted exclusively with native plant material, as described above.

(Ord. No. 601, pt. 1, § 4.15.3, 10-2-2001; Ord. No. 617, pt. 3, § 4.15.3, 7-9-2002; Ord. No. 794, pt. 1, 3-18-2008; Ord. No. 930, pt. 2, 6-11-2013; Ord. No. 954, pt. II, 5-20-2014)



Sec. 4.664. - Landscape material standards.

4.664.A. *Quality and species.* The following shall be considered minimum standards for all landscape materials:

1. Plant and landscape materials used to satisfy the requirements of this division (Article 4, Division 15) shall meet or exceed the standards for Florida No. 1, as given in the latest edition of Grades and Standards for Nursery Plants, parts I and II, as prepared by the Florida Department of Agriculture and Consumer Services.
2. Trees and plants used in a landscape design pursuant to this section 4.664 shall be cold-tolerant; drought-tolerant; or appropriate for the environmental setting in which they are to be planted. They must be hardy, sustainable, commercially available; and be otherwise consistent with the purpose and intent of this section. At least 50 percent of all required landscaping, by category in the form of trees, shrubs and ground cover plants, other than grass, shall consist of native vegetation. The Xeriscape Plant Guide by the South Florida Water Management District, or if available County or regional lists as amended may be used to determine appropriate native vegetation. To qualify as native vegetation, plant material shall be native, noninvasive and designated as hardy or very hardy.
3. *Prohibited species.*
 - a. The following species shall not be planted. Where such species already exist, their removal shall be a condition of development approval.
 - (1) Melaleuca (Melaleuca spp).
 - (2) Brazilian pepper (Schinus terebinthifolius).
 - (3) Australian pine (Casuarina).
 - (4) Ficus trees, when located less than 50 feet from a public street right-of-way, street pavement, utility easement or septic tank drainfield.
 - (5) Carrotwood (Cupaniopsis anacardioides).
 - (6) Catclaw mimosa (Mimosa pigra).
 - (7) Earleaf acacia (Acacia auriculaeformis).
 - (8) Eucalyptus species (except Eucalyptus torelliana, Eucalyptus camaldulensis and Eucalyptus cinerea).
 - (9) Silk oak (Grevillea robusta).
 - b. The Board of County Commissioners has established by resolution an additional list of species which shall not be planted except for sterile hybrids and cultivars. The removal of such species shall be a condition of approval for all new development. Where additions or revisions to existing final site plans are proposed, such species shall be removed to the degree feasible as determined by the approving entity:

<i>Abrus precatorius</i>	Rosary pea
<i>Acacia auriculiformis</i>	Earleaf acacia
<i>Adenanthera pavonina</i>	Red sandalwood
<i>Agave sisalana</i>	Sisal hemp
<i>Albizia julibrissin</i>	Mimosa, silk tree
<i>Albizia lebbek</i>	Woman's tongue
<i>Aleurites fordii</i>	Tung oil tree
<i>Alstonia macrophylla</i>	Devil-tree

<i>Alternanthera philoxeroides</i>	Alligator weed
<i>Anredera leptostachys</i>	Madeira vine
<i>Ardisia crenata</i> (A. crenulata)	Coral ardisia
<i>Ardisia elliptica</i> (A. humilis)	Shoebutton ardisia
<i>Aristolochia littoralis</i>	Calico flower
<i>Bauhinia variegata</i>	Orchid tree
<i>Bischofia javanica</i>	Bischofia
<i>Broussonetia papyrifera</i>	Paper mulberry
<i>Callisia fragrans</i>	Inch plant
<i>Casuarina cunninghamiana</i>	Australian pine
<i>Casuarina equisetifolia</i>	Australian pine
<i>Casuarina glauca</i>	Suckering Australian pine
<i>Cereus undatus</i>	Night-blooming cereus
<i>Cestrum diurnum</i>	Day jessamine
<i>Cinnamomum camphora</i>	Camphor tree
<i>Colocasia esculenta</i>	Wild taro
<i>Colubrina asiatica</i>	Lather leaf
<i>Cupaniopsis anacardioides</i>	Carrotwood
<i>Dalbergia sissoo</i>	Indian rosewood
<i>Dioscorea alata</i>	Winged yam
<i>Dioscorea bulbifera</i>	Air-potato
<i>Eichhornia crassipes</i>	Water hyacinth
<i>Enterolobium contortisiliquum</i>	Ear-pod tree

<i>Ficus microcarpa</i> (<i>F. nitida</i> and <i>F. retusa</i> var. <i>nitida</i> misapplied)	Laurel fig
<i>Flacourtia indica</i>	Governors plum
<i>Flueggea virosa</i>	Chinese waterberry
<i>Hiptage benghalensis</i>	Hiptage
<i>Hydrilla verticillata</i>	Hydrilla
<i>Hygrophila polysperma</i>	Green hygro
<i>Hymenachne amplexicaulis</i>	West Indian marshgrass
<i>Imperata cylindrica</i> (<i>I. brasiliensis</i> misapplied)	Cogon grass
<i>Ipomoea aquatica</i>	Waterspinach
<i>Jasminum dichotomum</i>	Gold coast jasmine
<i>Jasminum fluminense</i>	Brazilian jasmine
<i>Lantana camara</i>	Lantana, shrub verbena
<i>Leucaena leucocephala</i>	Lead tree
<i>Ligustrum lucidum</i>	Glossy privet
<i>Ligustrum sinense</i>	Chinese privet, hedge privet
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lygodium japonicum</i>	Japanese climbing fern
<i>Lygodium microphyllum</i>	Old World climbing fern
<i>Macfadyena unguis-cati</i>	Cat's claw vine
<i>Manilkara zapota</i>	Sapodilla
<i>Melaleuca quinquenervia</i>	Melaleuca, paper bark
<i>Melia azedarach</i>	Chinaberry
<i>Melinis minutiflora</i>	Molasses grass

<i>Merremia tuberosa</i>	Wood rose
<i>Mimosa pigra</i>	Catclaw mimosa
<i>Myriophyllum spicatum</i>	Eurasian watermilfoil
<i>Nandina domestica</i>	Nandina, heavenly bamboo
<i>Nephrolepis cordifolia</i>	Sword fern
<i>Nephrolepis multiflora</i>	Asian sword fern
<i>Neyraudia reynaudiana</i>	Burma reed; cane grass
<i>Ochrosia parviflora</i>	Kopsia
<i>Oeceoclades maculata</i>	Lawn orchid
<i>Paederia cruddasiana</i>	Sewer vine, onion vine
<i>Paederia foetida</i>	Skunk vine
<i>Panicum repens</i>	Torpedo grass
<i>Passiflora foetida</i>	Stinking passion vine
<i>Pennisetum purpureum</i>	Napier grass
<i>Pistia stratiotes</i>	Water lettuce
<i>Psidium cattleianum</i> (<i>P. littorale</i>)	Strawberry guava
<i>Psidium guajava</i>	Guava
<i>Pteris vittata</i>	Chinese brake fern
<i>Pueraria montana</i> (<i>P. lobata</i>)	Kudzu
<i>Rhodomyrtus tomentosa</i>	Downy rose-myrtle
<i>Rhoeo spathacea</i> (see <i>Tradescantia spathacea</i>)	
<i>Rhynchelytrum repens</i>	Natal grass
<i>Ricinus communis</i>	Castor bean
<i>Ruellia brittoniana</i>	Mexican petunia

<i>Sapium sebiferum</i>	Popcorn tree, Chinese tallow tree
<i>Scaevola sericea</i> (<i>Scaevola taccada</i> var. <i>sericea</i> , <i>S. frutescens</i>)	Scaevola, half-flower, beach naupaka
<i>Schefflera actinophylla</i> (<i>Brassaia actinophylla</i>)	Schefflera, Queensland umbrella tree
<i>Schinus terebinthifolius</i>	Brazilian pepper
<i>Senna pendula</i> (<i>Cassia coluteoides</i>)	Climbing cassia, Christmas cassia, Christmas senna
<i>Sesbania punicea</i>	Purple sesban
<i>Solanum tampicense</i> (<i>S. houstonii</i>)	Wetland night shade, aquatic soda apple
<i>Solanum diphyllum</i>	Two-leaf nightshade
<i>Solanum jamaicense</i>	Jamaica nightshade
<i>Solanum viarum</i>	Tropical soda apple
<i>Syngonium podophyllum</i>	Arrowhead vine
<i>Syzygium cumini</i>	Jambolan, java plum
<i>Syzygium jambos</i>	Rose apple
<i>Tectaria incisa</i>	Incised halberd fern
<i>Terminalia catappa</i>	Tropical almond
<i>Thespesia populnea</i>	Seaside mahoe
<i>Tradescantia fluminensis</i>	White-flowered wandering jew
<i>Tradescantia spathacea</i> (<i>Rhoeo spathacea</i> , <i>Rhoeo discolor</i>)	Oyster plant
<i>Thespesia populnea</i>	Seaside mahoe
<i>Tribulus cistoides</i>	Burrnut
<i>Triphasia trifolia</i>	Lime berry
<i>Urena lobata</i>	Caesars weed
<i>Urochloa mutica</i> (<i>Brachiaria mutica</i>)	Para grass

4.664.B. *Trees.*

1. At the time of planting, all required trees shall have a minimum height of ten feet and one defined vertical stem with a minimum diameter of two inches caliper at the time of planting, except that whenever three or fewer trees are required to be planted on site, such trees shall have a minimum height of 12 feet, a minimum crown spread of six feet and a minimum DBH of three inches.
 - a. Planted trees must be a species with an average mature crown spread of at least 15 feet, or they must be grouped so as to create a crown spread of 15 feet.
 - b. Tree species and placement shall be selected so as to minimize conflicts with existing or proposed utilities. As set forth below no tree shall be planted where it could, at mature height, conflict with overhead power lines.
 - (1) Large trees (height at maturity of more than 30 feet) shall be planted no closer than a horizontal distance of 30 feet from the nearest overhead power line.
 - (2) Medium height trees (height at maturity between 20 and 30 feet) shall be offset at least 20 feet and small trees (height at maturity of less than 20 feet) require no offset.
 - (3) No tree, shrubs, hedges or vines shall be planted within five feet of any existing or proposed utility pole, guy wire or pad mounted transformer.
 - (4) Palms should be planted at a distance equal to or greater than the average frond length plus two feet from power lines.
 - c. The Growth Management Director may grant an exception to the size requirement if:
 - (1) Species considerations and availability of stock restrict the tree size requirement, then two six-foot to eight-foot trees will be used as the standard; and
 - (2) The habitat in question normally includes native trees of smaller size (for example: wetlands, dunes and mangrove areas).
2. **At least 75 percent of all trees planted to satisfy the requirements of this section shall be native species.**
 - a. All trees required within vehicular use areas shall be shade trees.
 - b. Not more than 30 percent of all required trees shall be palms. Where used, two palms or three sabal palms shall constitute one required tree.
 - c. When more than ten trees are required to be planted to meet the requirements of this section 4.664, a mix of species shall be provided. The number of species to be planted shall vary according to the overall number of trees required to be planted. The minimum number of species to be planted is indicated in the following table. Species shall be planted in proportion to the required mix. This species mix standard shall not apply to areas of vegetation required to be preserved by law.

Required Tree Species Mix	
Number of Trees Required	Minimum Number of Species
1—20	2
21—30	3
31—40	4
41+	5

3. The following species may be planted but they shall not be used to satisfy the tree requirements of this section 4.664 unless height restrictions such as proximity to overhead utilities warrant their use as approved by the Growth Management Director.

- a. Crape myrtle (*Lagerstroemia indica*).
- b. Wax myrtle (*Myrica cerifera*).
- c. Japanese privet (*Ligustrum japonicum*).
- d. Sweet acacia (*Acacia farnesiana*).
- e. Annatto (*Bixa orellana*).
- f. Black calabash (*Enallagma latifolia*).
- g. Jaboticaba (*Myrciaria cauliflora*).
- h. Marlberry (*Ardisia escallonioides*).
- i. Areca palm (*Chrysalidocarpus lutescens*).
- j. Paurotis palm (*Acoelorrhaphe wrightii*).
- k. Seagrape (*Coccoloba uvifera*).
- l. Spineless yucca (*Yucca elephantipes*).

4.664.C. *Hedges and shrubs.* The hedges and shrubs required by this section 4.664 shall consist of at least 75 percent native species and shall meet the following criteria except where a greater requirement is otherwise specified:

1. Shrubs shall be a minimum height of 24 inches at the time of planting. In addition, shrubs shall at a minimum be in a three-gallon container or be an equivalent ball and burlapped plant. All such plants shall meet the Florida No. 1 requirements, per species, as described in the latest version of the Florida Department of Agriculture and Consumer Services "Nursery Grades and Standards."
2. Shrubs with 15 to 23 inches of spread shall be planted on three-foot centers; shrubs with greater than 23 inches of spread shall be planted on five-foot centers. In no event shall spacing exceed five feet on center, nor shall plants be closer than two feet to the edge of any pavement.

4.664.D. *Vines.* Vines which have a minimum of three runners 30 inches in length may be used in conjunction with fences, screens or walls to meet barrier requirements. If vines are used in conjunction with fences, screens or walls, their runners shall be attached in a way that encourages proper growth.

4.664.E. *Ground treatment.* The ground area within required landscaped areas which is not dedicated to trees, vegetation or landscape barriers shall be appropriately landscaped and present a finished appearance and reasonably complete coverage upon planting. The following standards shall guide the design of ground treatment:

1. Ground covers shall be spaced so as to present a finished appearance and complete coverage within six months after planting. Ground covers required by this division shall consist of at least 50 percent native species.
2. Organic mulch shall be temporarily applied to areas not immediately covered by ground cover. Mulch may be used as a permanent ground treatment in landscape designs where ground cover or grass is inappropriate. Where mulch is permanently installed, it shall be renewed and maintained as required. Cypress mulch is prohibited.
3. Inorganic mulch materials such as rock, pebbles and sand, or other inorganic materials such as walls or paving blocks, may be used in combination with organic mulch materials to satisfy the requirements of this section 4.664. Other recycled materials as approved by the Growth Management Director may also be used to satisfy the requirements of this division. Artificial plants shall not be used to meet any of the requirements of this division.
4. The use of drought-tolerant grasses is preferred over traditional turf grass varieties. Grass areas may be sodded, plugged, sprigged or seeded, provided that solid sod shall be used in swales, rights-of-ways or other areas subject to erosion. In areas where grass seed is used, nursegrass seed shall also be sown for immediate effect, and maintenance shall be provided until coverage is completed.

5. Irrigated turfgrass areas shall be consolidated and limited to those areas on the site that receive pedestrian traffic, provide recreation use, provide cover for on-site sewage disposal systems, or provide soil erosion control such as on slopes or where turfgrass is used as a design unifier or other similar practical use. Turf areas shall be quantified and identified on plan.

4.664.F. *Tree preservation credits.* A preserved cold-tolerant and drought-tolerant tree that meets the standards below may be substituted for any of the trees required by the landscaping requirements of this section.

1. Preserved cold-tolerant and drought-tolerant trees shall be credited for required trees, pursuant to the following formula.

<i>DBH of Preserved Tree</i>	<i>Credits</i>
31—36	8
25—30	5
19—24	4
13—18	3
7—12	2
2—6	1

2. No credit shall be granted for trees which are:

- Classified as prohibited;
- Located within recreational tracts, golf courses or similar subareas within planned unit developments;
- Located within required preservation areas;
- Dead, dying, diseased or insect-infested;
- Damaged from skinning, barking or bumping; or
- Suppressed trees which have been overtopped and whose crown development is restricted from above due to their relative size in relation to surrounding trees.

(Ord. No. 601, pt. 1, § 4.15.4, 10-2-2001; Ord. No. 794, pt. 1, 3-18-2008; Ord. No. 930, pt. 2, 6-11-2013)

Sec. 4.665. - Maintenance of required landscaping.

4.665.A. *Protection of required landscaping.* Encroachment into required bufferyards and landscaped areas by vehicles, boats, mobile homes or trailers shall not be permitted, and the following protection measures shall be required.

- Required landscaped areas shall not be used for the storage or sale of materials or products or the parking of vehicles and equipment.
- Wheel stops or curbs of not more than six inches in height and width shall be placed at least two feet from the edge of a required landscaped area. Where a stop or curb is used, the area between it and the end of the space may be landscaped.
- During periods of development and construction, the areas within the drip-line of preserved trees shall be maintained at their original grade with pervious landscape material. Within these areas, there shall be:

- a. No trenching or cutting of roots;
 - b. No fill, compaction or removal of soil; and
 - c. No use of concrete, paint, chemicals or other foreign substances.
4. Barriers in compliance with the preserve area management plan shall be provided around all preserved trees during construction.
 5. All existing trees and native vegetation not located in areas requiring their removal shall be retained in their undisturbed state.

4.665.B. *Installation and maintenance.* All property owners shall be responsible for properly installing and maintaining required landscaping so as to at all times present a healthy, neat and orderly appearance, free of refuse and debris.

1. All landscaping shall be installed according to sound nursery practices in a manner designed to encourage vigorous growth. Soil improvement measures may be required to ensure healthy plant growth. A plant's or tree's growth characteristics shall be considered before planting to prevent conflicts with utilities, views or signs.
2. If vegetation which is required to be planted or preserved by this division dies it shall be replaced with equivalent vegetation. All trees for which credit was awarded and which subsequently die, shall be replaced by the requisite number of living trees according to the standards established in this division.
3. Prior to the issuance of a certificate of occupancy, security shall be required for 50 percent of the supply and installation cost of the landscape materials to ensure adequate maintenance and survivability of vegetative materials. The applicant shall warrant and guarantee a survival rate of 100 percent for all required landscape materials for a period of 24 months following the certification of installation by the landscape architect. Such securities shall be released upon inspection and approval by the Growth Management Department that the provisions of this section have been met.
4. The property owner, or successors in interest, or agent, if any, shall be jointly and severally responsible for the following:
 - a. Regular maintenance of all landscaping to be kept alive and in good condition and in a way that presents a healthy, neat, and orderly appearance. All landscaping shall be maintained free from disease, pests, weeds and litter. Maintenance shall include weeding, watering, fertilizing, pruning, mowing, edging, mulching or other maintenance, as needed and in accordance with acceptable horticultural practices.
 - b. Repair or replacement of required walls, fences or structures to a structurally sound condition.
 - c. Regular maintenance, repair or replacement, where necessary, of any screening or buffering required by this division.
 - d. Perpetual maintenance to prohibit the reestablishment of invasive exotic species within landscaping and preservation areas.
5. Pruning of trees shall be permitted to allow for healthy uniform growth and to promote structural, aesthetic and safety considerations. All permitted pruning shall be conducted in accordance with the latest standards of the National Arborist Association. Hat-racking is prohibited.
6. Landscaping shall be permitted in easements only with the written permission of the easement holder. Written permission shall specify the party responsible for replacing disturbed landscape areas and shall be submitted to the County in a form acceptable to the County Attorney. Written permission to plant within easements shall be filed with the land records applicable to the site.

(Ord. No. 601, pt. 1, § 4.15.5, 10-2-2001; Ord. No. 794, pt. 1, 3-18-2008; Ord. No. 930, pt. 2, 6-11-2013)

Sec. 4.666. - Tree protection.

4.666.A. *Protected trees.* The following native trees are protected and shall not be removed or damaged without the approval specified below.

1. Any hardwood native tree having a diameter of eight inches DBH or greater.

2. Any native hardwood tree four-inch DBH or greater or any native softwood, including pine trees, eight-inch DBH or greater located in the perimeter area of any development site.
3. Any tree within a canopy road tree protection zone, except prohibited trees.

4.666.B. *Location of protected trees.* All protected trees which may be impacted within 75 percent of their canopy drip-lines by proposed development activities shall be physically located on site and indicated on the tree survey as required in section 4.662.A.7., Barricades must be constructed around the critical protection zone of each tree or cluster of trees. These barricades must be constructed of a minimum of one-fourth-inch diameter rope which is yellow or orange in color and made of nylon or poly. The rope is to be attached to a minimum of two × two wooden poles, iron rebar, two inches or greater PVC pipe or other material with prior approval of the Growth Management Department. The rope must be a minimum of four feet off the ground and may not be attached to any vegetation. All barricades must be maintained intact for the duration of construction. The location of proposed development activities that are within 15 feet of the critical protection zone of a protected tree must be located using brightly colored flagging to indicate corners.

4.666.C. *Criteria for protected tree removal.* Approval for the removal of a protected tree may be granted if the applicant demonstrates the presence of one or more of the following conditions:

1. Necessity to remove a tree which poses a safety hazard to pedestrians or other persons, buildings or other property, or vehicular traffic, or which threatens to cause disruption of public services.
2. Necessity to remove a diseased or pest-infested tree to prevent the spread of the disease or pest.
3. Necessity to reduce competition between trees or to remove exotic species and replace them with native species.
4. Tree removal which is essential for reasonable and permissible use of property, or necessary for construction of essential improvements, resulting from:
 - a. Need for access immediately around the proposed structure for essential construction equipment, limited to a maximum width of 20 feet from the structure.
 - b. Limited access to the building site essential for reasonable use of construction equipment.
 - c. Essential grade changes needed to implement safety standards common to standard engineering or architectural practices, and reference to a text where such standards are found shall be required.
 - d. Location of driveways, buildings or other permanent improvements where there is no other alternative or to provide access.
 - e. Compliance with other ordinances or codes such as building, zoning, subdivision regulations, health provisions, and other environmental ordinances where there is no alternate way to achieve these goals.

4.666.D. *Tree replanting requirements.*

1. As a condition of the issuance of a permit for removal of a protected tree, a satisfactory plan shall be presented by the applicant for the successful replacement of trees to be removed, based on the following schedule:

Diameter (DBH) Tree Removed (inches)	Minimum Replacement Tree Credits	Minimum Size Replacement Tree	
		Height (feet)	Diameter (caliper) (inches)
over 60	30	14—16	4
49—60	24	14—16	4
43—48	24	12—14	3
37—42	14	12—14	3

31—36	8	12—14	3
25—30	6	10—12	2
19—24	5	10—12	2
13—18	4	8—10	2
7—12	3	8—10	2
4—6	2	8—10	2

- a. If protected trees are removed without a permit or otherwise in violation of this regulation, the number of required replacement tree credits in the schedule shall be doubled.
- b. Trees preserved on site for reforestation requirements shall be given credit on an inch-for-inch basis to be applied to the tree replanting schedule, e.g., a six-inch preserved tree may be given credit as one four-inch tree plus one two-inch tree, or two three-inch trees.
- c. In order to promote planting of larger size replacement trees, the number of two-inch diameter tree credits that must be replanted, as determined by the table above, may be reduced when replanted trees are of a larger size than two-inch DBH, according to the following table:

Diameter (caliper) of Tree Replanted	Number of Tree Credits
for each 3-inch tree	2 tree credits
for each 4-inch tree	3 tree credits
for each 5-inch tree	5 tree credits
for each 6-inch tree	7 tree credits

2. If the total number of trees to be replanted based on the tree replanting schedule in (D.1.) above exceeds that which may be reasonably planted on the development site, the applicant may enter into an agreement with the County, as approved by the Growth Management Director, to plant the excess trees on an approved public site or to provide the monetary equivalent to the County for use in public landscaping projects.
3. If any tree for which credit was given under this division is not alive and growing three years after all associated development activity on the property is completed, it shall be removed and replaced with trees of at least the size which originally would have been required to be planted if such credit had not been allowed.

4.666.E. *Protection minimum for protected trees.* The development activity shall preserve at least ten percent of the total number of protected trees on the site unless it can be shown that the property would be precluded of reasonable use if the trees are not removed.

(Ord. No. 601, pt. 1, § 4.15.6, 10-2-2001; Ord. No. 930, pt. 2, 6-11-2013)

Cross reference— Wetlands protection, § 4.1 et seq.; uplands protection, § 4.31 et seq.; mangrove protection, § 4.71 et seq.

Sec. 4.667. - Alternative compliance.

An applicant may submit a landscape plan which varies from the strict application of the requirements of this division in order to accommodate unique site features or utilize innovative design. An alternative compliance landscape plan shall be approved only upon a finding that it fulfills the purpose and intent of this division as well as or more effectively than would adherence to the strict

requirements of this division.

- 4.667.A. *Evaluation.* The applicant must provide documentation to justify a landscape plan not meeting the minimum standards of this division. Such documentation shall include a quantitative analysis of areas not meeting minimum standards or dimensions, required vs. provided dimensions, and materials not meeting minimum Code requirements.

In evaluating proposed alternative compliance landscape plans, considerations shall be given to proposals which preserve native vegetation and use drought-tolerant plantings and other low water use landscape design principles and where the design may accomplish one or more of the following:

1. Ensures preservation of the maximum predevelopment vegetation on the site.
2. Is designed to assure that the overall appearance and function of the proposed project is compatible with other properties in the immediate area; is demonstrably responsive to the environmental attributes of soil, slope, hydrology, and vegetative communities unique to the site; is consistent with sound planning and site design principles, and contingent upon:
 - a. Structures and other improvements are designed as to utilize existing site characteristics of topography, existing vegetative communities, and any unique environmental feature.
 - b. Conflicts between vehicular and pedestrian circulation are avoided.
 - c. Planting plans indicate a diversity of plant species in the categories of ground covers, shrubs, and trees.
 - d. Integration of proposed and existing vegetation is demonstrated in the plans with an emphasis on maintaining native community buffers and corridors, preserving or restoring forest community types, and providing for the natural ecological function of each type by using such techniques as preserving a diversity of upperstory, midstory, and understory.
 - e. Plant schedules contain botanical and common names, sizes of materials by dimension and containerize, location by dimension, and notation describing species diversity.
 - f. Planting specifications and species selected for the site are suitable for individual site environmental characteristics of soil slope, aspect, wetness and microclimate.
 - g. Plans indicate compatibility with adjacent site environmental features.
3. Implements a EcoArt element as approved by the Growth Management Department Director.
4. Provides foundation landscaping, comprised entirely of native vegetation around principle structures with educational signage identifying native plant species.

(Ord. No. 601, pt. 1, § 4.15.7, 10-2-2001; Ord. No. 930, pt. 2, 6-11-2013)

Sec. 4.668. - Certification of compliance.

Prior to the issuance of a certificate of occupancy the owner shall provide to the Growth Management Department a certificate of completion prepared by a landscape architect licensed by the State of Florida demonstrating compliance with the provisions of this division. The certificate shall specifically include reference to the landscaping area, installation of materials, automatic irrigation system and an audit of percent irrigated area. If an irrigation system is installed and an irrigation plan was not provided for approval with the approved landscape plan, an irrigation plan shall be provided and certified by the landscape architect or licensed plumbing contractor or licensed irrigation sprinkling contractor as in compliance with the criteria in section 4.662.B. The irrigation plan shall also include the irrigation permit number, as issued by the Building Department, for the construction of the irrigation system. The following certification statement must appear on the certification report:

I hereby notify the County of the completion of the installation of landscaping for the above referenced project and certify that the installation of vegetative materials, the automatic irrigation system and the positioning of the irrigated area as depicted on the site plan is in substantial conformance with Article 4, Division 15, Land Development Regulations,

8/12/2020

Martin County, FL Land Development Regulations

NEW BUSINESS #2

Martin County Code, and the plans and specifications permitted by the County . A copy of the approved project drawings is attached with deviations, if applicable.) I hereby fix my seal this day of _____, 20____.

Signature and Seal

Date

Name (Please Print)

FL Registration No.

(Ord. No. 601, pt. 1, § 4.15.8, 10-2-2001; Ord. No. 930, pt. 2, 6-11-2013)

Secs. 4.669—4.690. - Reserved.

DIVISION 2. - REQUIREMENTS FOR SPECIFIC AREAS

Sec. 108-411. - Landscape plan approval.

- (a) *Development plan review.* A landscape plan showing proposed landscaping shall be submitted at such time as any development plan is submitted for development plan review. All landscape plans shall be drawn to scale and shall include sufficient information to demonstrate compliance with all of the landscape requirements of this article and section 108-243. All landscape plans must include a complete list of the plant types and sizes to be planted along with a planting and maintenance schedule.

In addition to review procedures identified in article II of this chapter, landscape plans shall be reviewed by the tree commission. The tree commission, within 30 days of receiving a development plan with the landscape component, shall hold a public meeting to review and act on such plans. Required tree removal permit information identified in article VI of chapter 110 shall be submitted with the landscape plan.

The planning board shall not review a development plan until the plan has been reviewed by the tree commission, unless the city landscape coordinator renders a finding that the subject development plan is compliant with all criteria of this article and article VI of chapter 110. In the latter case, the development plan may be reviewed by the planning board prior to review by the tree commission; however, in such case any development plan approval by the planning board shall be conditioned on approval by the tree commission. Notice of the date of all public meetings of the tree commission shall be provided to the applicant. The applicant shall be given reasonable opportunity to be heard at the public meeting prior to the tree commission's action.

- (b) *Building permits.* Where development plan review is not required, a landscape plan shall be submitted at the time application is made for a building permit. The landscape plan shall be drawn to scale and shall clearly delineate the location and dimensions of the existing and proposed landscaping. The landscape plan shall also include a detailed plan of off-street parking areas as well as the location of existing and proposed buildings.

(Ord. No. 97-10, § 1(3-13.3), 7-3-1997)

Sec. 108-412. - Minimum landscaping requirements.

- (a) *Minimum landscaped areas.* The minimum area of a building site which shall be landscaped with trees, including canopy trees, shrubs and ground cover, and other landscaping as defined in this article shall be a minimum of 20 percent of the building site area.
- (b) *Minimum native plant requirement.* Seventy percent of the minimum required landscaping

shall be native plant species.

- (c) *Landscaping combination requirement.* All landscaping must consist of a combination of trees, including canopy and shade trees, shrubs and ground cover and must be in compliance with the land development regulations.
- (d) *Maintenance.* The owner or the owner's agent, where appropriate, shall be responsible for the maintenance of all required landscaping. All required landscaping shall be maintained free of debris and free of tree abuse. Where newly installed plants do not survive, they shall be replaced no later than 30 days from the time the prior tree expired.

(Ord. No. 97-10, § 1(3-13.4), 7-3-1997)

Sec. 108-413. - Requirements along street frontage.

- (a) *Location of landscaping.* Landscaping shall be required to be located within the property line and/or building setback as established by the land development regulations or as otherwise established. Landscaping, when required in easements, may be adjusted by the planning board. A decision on any related issue decided upon by the planning board but remaining in dispute shall be resolved by the city commission.
- (b) *Minimum standards.* The landscaping shall comply with the following stipulated minimum standards and shall, in all cases, consist of a minimum of 70 percent native species. The local extension service provides a list of native trees, shrubs, and ground cover:

MINIMUM STANDARDS FOR LANDSCAPING ALONG THE RIGHT-OF-WAY

Area of Site	Width of Required Landscaping (linear feet)	Number of Plant Units* Required per 100 Linear Feet of Property Line or Right-of-Way
Less than 0.5 acre	10	40
0.5 to <1 acre	20	80
1 to <3 acres	30	120
3 or more acres	40	160
*A plant unit is a measurement describing the amount of required plant material in flexible units based on the unit values in the following table.		

Type of Plant Material	Number of Plant Units
One canopy or shade tree	10
One evergreen or ornamental tree	3
One shrub	1

8/20/2020

Key West, FL Code of Ordinances

All property other than the required landscaped strip lying between the right-of-way and off-street parking area or other vehicular use area shall be landscaped with grass or other ground cover.

- (c) *Required screening material.* Any combination of barriers, shrub or landscaped berm shall be planted or installed along the entire length of each required landscape strip. In all residential or commercial or mixed use districts, the barrier, shrub, or landscape berm (berm with shrubs) shall be a minimum of 3.5 feet in height, except in commercial districts, where the barrier, shrub or landscaped berm along street rights-of-way shall be a minimum of three feet in height.

Where a barrier is erected, the barrier shall be restricted to a decorative masonry wall pursuant to standards cited in section 108-449. Where a decorative wall is provided, the required plant material shall be planted on the street side along a public right-of-way and shall be maintained in perpetuity by the applicant or successive owners. All nonliving barriers abutting public streets shall be at least 18 inches inside the property line or within the building setback line, whichever is greater.

(Ord. No. 97-10, § 1(3-13.5), 7-3-1997)

Sec. 108-414. - Requirements for interior areas.

- (a) *Scope.* This section presents a summary of the minimum requirements for landscaping and tree planting within the interior of parking lots and along the other perimeters of a parking lot.
- (b) *Size and composition of interior landscaping.* All off-street parking areas including all paved areas for off-street parking, drives, aisles, standing zones, and other vehicular use areas, except parking areas for single-family residences, shall have a minimum landscape area of 20 percent of the total parking area. Each landscaped area shall have a minimum dimension of six feet with a minimum of 60 square feet of continuous landscaped open area and is required to contain at least one shade tree. All landscaped open area shall contain grass, ground cover or other living plant material. Landscaped area for the interior of parking lots as well as landscaped area for perimeter requirements and other nonvehicular use areas shall not include any water areas. The total number of required trees shall be one tree for each 100 square feet or fraction thereof of required landscape area.
- (c) *Use of interior landscape strip.* Interior parking landscaping shall, insofar as possible, be used to delineate and guide major traffic movement within the parking area and to prevent cross space driving wherever possible. Landscaping dividing strips with concrete curbing along the outer perimeter and with or without walkways shall be used to subdivide parking areas. Landscaping shall be designed so no more than ten spaces shall be in an uninterrupted row. Where two rows of parking spaces are adjacent to one another (i.e., head to head), a

landscape strip with a minimum dimension of six feet shall be planted along the common boundary. In addition, each ten parking stalls must be separated by a parallel landscaped area with a minimum dimension of nine feet to allow car doors to open freely. The end of each aisle and corner area must be landscaped. Each landscape strip shall contain a minimum of one shade tree.

(Ord. No. 97-10, § 1(3-13.6), 7-3-1997)

Sec. 108-415. - Perimeter landscape requirements.

- (a) *Scope; standards.* Perimeter landscaping defines parking areas and prevents two adjacent lots from becoming one large expanse of paving. Perimeter landscaped areas for all off-street parking areas, excepting single-family homes and parking lots for six or less vehicles, must meet the following standards:

MINIMUM PARKING LOT
PERIMETER LANDSCAPING

Building Site (sq. ft.)	Perimeter Landscaping Width (feet)
20,000 or less	5.0
20,000—50,000	7.5
Over 50,000	10.0

- (b) *Required plant material in perimeter landscape strip.* One canopy shade tree and ten shrubs per 35 linear feet or fraction thereof is required in perimeter landscaped areas.
- (c) *Cross easements.* Cross easements between abutting parking lots together with coordinated plans for access, egress and internal circulation may be required for purposes of maintaining adopted levels of service for traffic circulation and avoiding the cumulative effect of uncontrolled curb cut proliferation.

(Ord. No. 97-10, § 1(3-13.7), 7-3-1997)

Sec. 108-416. - Other landscape requirements for nonvehicular use areas.

- (a) Trees shall be planted in the nonvehicular open space, excluding the required street frontage landscape strips, the interior parking lot landscape strips, and the perimeter landscape strips, to meet the following requirements:

LANDSCAPE REQUIREMENTS IN
NONVEHICULAR USE AREAS

8/20/2020

Key West, FL Code of Ordinances

Percent of Site in Nonvehicular Open Space (NOS) (percent)	Tree Requirement
Less than 30	4 trees/2,000 sq. ft. NOS
30—39	4 trees/2,500 sq. ft. NOS
40—49	4 trees/3,000 sq. ft. NOS
50—59	4 trees/3,500 sq. ft. NOS
60 or more	4 trees/4,000 sq. ft. NOS

- (b) Grass, ground cover, shrubs, and other landscaping materials shall be used to treat all ground not covered by building, paving, or other structures. All structures shall be treated with landscaping so as to enhance the appearance of the structure and to screen any unsightly features. Trees, as required in this section, shall be spaced in clusters or situated in strategic locations consistent with good principles of design and plant installation.

(Ord. No. 97-10, § 1(3-13.8), 7-3-1997)

Secs. 108-417—108-445. - Reserved.



ARTICLE 2. - TREES AND NATIVE VEGETATION

Section 106.06. - Purpose.

The purpose of this article is to implement policies contained in the City Comprehensive Plan to preserve, protect, and encourage the proliferation of trees and native vegetative cover within the City of Marathon, as well as relocation or replacement where necessary, and to control and eliminate invasive non-native species.

Section 106.07. - Applicability.

- A. Regulated trees include Champion trees, Specimen trees, commercially exploited, threatened or endangered trees, regional important and native species. Examples of tree species that are of significant value to the natural environmental systems and to the population in general are identified on Table 106.12.1 "Regulated Trees"; for a complete list of regulated trees, contact the City Biologist.
- B. All land clearing and regulated tree removal in all land uses and zoning districts shall be prohibited without prior approval.
- C. Regulated trees shall not be removed after the issuance of a certificate of occupancy without securing a tree removal permit.
- D. Existing native vegetation on a development site shall be protected in accordance with the following requirements in the LDRs:
 - 1. Provision of Open Space in accordance Table 106.16.1 and with Article 9 of Chapter 107;
 - 2. Protection of natural plant and wildlife habitat in accordance with Article 3 of this chapter;
 - 3. Protection of all other conservation areas as identified in this chapter;
- E. The planting of non-native vegetation listed in F.A.C. 62C-52.011, Florida Prohibited Aquatic Plants List, and F.A.C. Rule 5B-57, Florida Noxious Weed List, shall be prohibited. The removal or control of all non-native invasive species shall be encouraged where not required to be removed by this chapter.
- F. For the purposes of this chapter, a qualified professional includes a landscape architect, approved biologist, certified environmental professional, certified urban forester, or certified arborist. Additionally, for the purposes of mangrove trimming, a qualified professional shall also include a professional mangrove trimmer as certified by the Department of Environmental Protection.

Section 106.08. - Permitting.

A tree removal permit is required for the removal of trees and alteration of associated native vegetation as set forth below:

- A. *Development Applications:* All development applications shall be subject to the permit conditions for tree removal set forth below.
1. At a minimum, applicants for site plans shall be required to have a vegetation survey prepared to locate any regulated trees.
 2. Unless prohibited by the City Biologist, removal or eradication of prohibited and discouraged non-native vegetation, identified in this section should be completed for the entire parcel concurrent with the permitted tree removal.
 3. Site plans shall be developed in consultation with the City Biologist and shall incorporate each regulated tree and associated native vegetation in its original location to the greatest extent possible within the drip line area of the regulated tree. In creating a plan to minimize the removal of regulated trees and associated native vegetation, consideration shall also be given to preserving non-invasive trees that exhibit the following characteristics:
 - (a) Trees located within regulated natural resource areas or habitats, which may be protected as conservation management areas. Required conservation and open space area within natural resource areas shall remain completely undisturbed including canopy, understory and groundcover vegetation and substrate.
 - (b) Creation or extension of connectivity or linkages to other natural areas in the form of tree and vegetation corridors.
 - (c) Existing regulated trees and native vegetation.
 - (d) Existing natural tree and vegetative groupings.
 - (e) Plantings that complement the project's design including enhancement of the architecture, landscape architecture, and streetscape appearance.
 - (f) Plantings located in required buffer areas.
 - (g) Plantings that screen unpleasant views or those that augment desirable views.
 - (h) Plantings that provide shade to structures, seating areas, or other pedestrian activity areas within or associated with the project.
 - (i) Plantings that complement or augment stormwater system design.
 - (j) Plantings that are disease and insect resistant.
 - (k) Plantings that have strong branching and root characteristics with resistance to high winds.

(l) Plantings that are salt tolerant.

- B. *Additional Permit Conditions:* A tree removal permit may also be issued for the removal of regulated trees, provided the City has determined there will be no significant adverse environmental impacts under the following circumstances:
1. Trees that are under attack from infestations of harmful insects, fungi, viruses, or other diseases that are not generally present on other trees of the same species but may reasonably be expected to spread to trees not currently so infested.
 2. Trees that constitute an immediate safety hazard either to persons, domestic animals, buildings and other structures, or to motor, bicycle, or pedestrian traffic.
 3. Trees that by the growth of its branches or roots is or will cause progressive damage to buildings or structures and where no reasonable correction or prevention method is available other than removal of the trees.
- C. *Application Requirements:* At the time of permit application, and prior to any land clearing or alteration, all applicants for a tree removal permit shall submit information necessary to fully understand the extent, nature, and potential impacts of the proposed project.
1. *Permit Applications:* In addition to a completed application form, the applicant shall at a minimum submit a vegetation survey and a description of the project with the identification of location and extent of all areas proposed for tree removal or clearing including the methods to be used for removal. Description shall also include areas of the project that contain utilities, utility easements, and proximity to buildings and other structures on the site.
 2. *Site Plan Approval:* In addition to the common application requirements in Chapter 102 Article 2 "Common Development Application Elements", the following information shall be required with applications for site plan approval:
 - (a) A recent aerial photograph with the parcel clearly delineated and representative color photographs;
 - (b) A certified site plan or survey, where applicable, showing all easements (both plan view and cross-sectional view sketches may be required);
 - (c) Identification of the type and location of native vegetation in the vicinity of, and likely to be affected by the project. This information is to be incorporated into one (1) or more of the following noted documents (in Subsections (b)—(f), herein);
 - (d) A Vegetation Survey for the entire parcel proposed for development. The Vegetation Survey shall graphically depict the location of each regulated tree and/or vegetated area to remain undisturbed on the parcel during

construction and shall list all species found on-site along with a general description of the condition of the vegetation. This Vegetation Survey shall be incorporated as a part of a Site plan package;

- (e) Either as a separate numbered list or a numbered tabular list on the Vegetative Plan a complete summary of all regulated trees and vegetation within the proposed building area (area to be cleared) indicating the species of tree, the diameter at breast height (DBH) in caliper inches, the condition of the tree, and whether it is proposed to be keep in place, relocated, removed, or mitigated for the removal;
- (f) Methods of erosion control;
- (g) All required documents of these sections must be prepared by a biologist, landscape professional, arborist or other qualified professional approved by the City Biologist.

D. *Vegetation Physical Protection during Construction:*

1. *Undisturbed Area:* The boundary of the area to be protected shall be at least equal to the area of the drip line of the outermost tree or trees in the undisturbed area. All natural resource areas, especially hammocks, cactus barrens, and any wetlands that are outside of approved clearing areas shall be protected from construction impacts.
2. *Barrier Placement and Usage:*
 - (a) The required vegetation protection within 50 feet of any construction activity or area used for storage of construction materials shall be enclosed within a protective barrier to limit access to the protected area, prevent the compaction of soil and the destruction or damage of the trees.
 - (b) Prior to any construction activity, the installation of the barriers shall be approved by the City Biologist.
 - (c) The protective barriers shall not be relocated without the approval of the City Biologist.
 - (d) The protective barriers shall remain in place and intact until construction is completed.
3. *Barrier Construction:*
 - (a) The posts shall be wood posts a minimum of two (2) inches × four (4) inches, steel or galvanized posts a minimum of two (2) inches diameter, or other post material of equivalent size and strength.
 - (b) The posts shall be placed not more than 12 feet apart, and implanted deeply enough in the ground to be stable with at least three (3) feet of the post visible above the ground. A top rail shall be attached to all posts.

- (c) The posts and top rail shall be linked together by a brightly colored net fence fabric.
- (d) The barrier shall not be located in such a way as to cause harm to the protected vegetation.
- (e) As an alternative to the above fencing details the City may require alternative fencing materials, such as chain-link fencing, on a case-by-case basis where additional protection is necessary due to intensity of construction activity, vulnerability of trees or native vegetation to be protected, or similar circumstance.

4. *Restrictions within the Undisturbed Areas:*

- (a) All construction activities shall be prohibited within the undisturbed area including all digging, trenching, construction lay-down areas, placement of hazardous materials, including fuels and solvents, placement of fill or soils, and parking of construction vehicles or employee vehicles.
- (b) No attachments or wires other than those of a protective and nondamaging nature shall be attached to any tree.
- (c) No grade changes shall be made within any undisturbed area without prior approval of the City Biologist. If a grade change is made and roots larger than one (1) inch in diameter are damaged or exposed, they shall be cut cleanly and recovered with soil and completed under the direct supervision of a certified arborist.
- (d) Planting in undisturbed areas outside the approved clearing area, including natural resource conservation areas and required open space areas is strictly prohibited. Only in the case of enforcement action approved by the City Biologist in response to unauthorized clearing or vegetation damage in this area shall planting be allowed and then, only pursuant to a plan approved by the City Biologist.

5. *Repair of Damage:* Trees that have been destroyed or received major damage during construction shall be replaced prior to the issuance of the Certificate of Occupancy and in accordance with Table 106.11.1 "Tree Removal Mitigation Table".

Section 106.09. - Relocation, Replacement and Mitigation Required.

Relocation, replacement, or mitigation shall be required for the alteration of regulated trees as set forth below:

- A. A regulated tree may be relocated in a manner to ensure survivability if there is no

reasonable alternative that allows incorporation of the tree into the parcel design, as determined by the project's landscape architect and approved by the City Biologist.

- B. The parcel owner shall provide irrigation, mulch, and other practical means to ensure survival of any relocated tree. If a relocated tree does not survive within a period of one (1) year, it shall be replaced with a native tree of similar size or by another mitigated method required by the City Biologist.
- C. If a regulated tree cannot be retained or relocated, the parcel owner shall install replacement plantings pursuant to Table 106.11.1 "Tree Removal Mitigation Table".
- D. If on-site planting is not feasible due to physical constraints such as limited space or unsuitable soils, off-site replacement may be allowed on public lands, within common areas, or native upland areas but with plantings approved and in quantity as designated by the City Biologist.
- E. Unless otherwise approved by the City Biologist, at least 65 percent of the trees planted as mitigation for the removal of regionally important plant species trees shall be the same species as the trees removed, provided that the mitigation tree is locally available.
- F. If suitable receiver sites (public lands, common areas) are not available at the time of mitigation, payment to the City Restoration Fund shall be made pursuant to Section 106.20 C.

Section 106.10. - Mitigation or Restoration.

- A. *Monitoring Time Frames:* Monitoring time frames shall be established for mitigation and replacement trees, as needed. Native trees that are planted, in excess of the requirements for landscaping within Article 8 of Chapter 107, may count toward mitigation requirements for tree replacement.
- B. *Size and Type of Replacements:* Replacement trees shall consist of native vegetation, indigenous to the area, and be Florida Grade No 1 or better in quality according to the current, most recent edition of "Grades and Standards for Nursery Plants," published by the Florida Department of Agriculture and Consumer Services, Article of Plant Industry.

Section 106.11. - Unauthorized Removal.

When regulated trees or vegetation are removed or damaged without a permit or when trees that were to be preserved in place or relocated are damaged or destroyed during activities conducted with a permit, they shall be replaced at double the rate identified in Table 106.11.1, below.

Table 106.11.1

Tree Removal Mitigation Table

Tree Type	Number of Replacement Trees (<i>per regulated tree</i>)
Native greater than 4 inches DBH	3
Listed species (any size)	3
Regionally important plant species (any size)	3

Section 106.12. - Tree Lists.

- A. *Regulated Tree List*: The list of trees identified in Tables 106.11.1 and 106.12.1 includes those native trees identified by the City to be of notable interest or high value for their species because of their age, size, condition, historic association or uniqueness. As part of the development review process, protection of these species through preservation or relocation will be determined on a tree-by-tree basis by the City Biologist.
- B. *Prohibited Invasive Exotic List*: In addition to the species identified in Table 106.12.2 includes species expressly prohibited in the Florida Keys, as recommended by the Florida Keys Invasive Exotics Task Force.

Table 106.12.1

Regulated Trees

Latin Name	Common Name	Latin Name	Common Name
Acacia farnesiana	Sweet acacia	Gymnathes lucida	Crabwood
Annona glabra	Pond apple, alligator apple	Hypelate trifoliata	White ironwood
Ardisia escallonioides	Marlberry, marbleberry		
Avicennia germinans	Black Mangrove		

Bourreria succulenta var. revoluta	Strongbark	Krugiodendron ferreum	Black ironwood
Bumelia spp.	Buckthorn, saffron plum, bumelia	Languncularia racemosa	White mangrove, white buttonwood
Bursera simaruba	Gumbo Limbo, tourist tree	Lysiloma latisilqua	Wild tamarind
Canella alba	Wild cinnamon	Metopium toxiferum	poisonwood
Chrysophyllum oliviforme	Satin leaf	Mastichodendron foetidissimum	Mastic
Citharexylum fruticosum	Fiddlewood	Myrcianthes fragrans	Twinberry
Clusia rosea	Pitch apple, autograph tree	Myrica cerifera	Wax myrtle
Coccoloba diversifolia	Pigeon Plum	Nectandra coracea	Lancewood
Coccoloba uvifera	Sea grape		
Coccothrinax argentata	Silver palm	Piscidia piscipula	Jamaican dogwood; fish-poison tree
Conocarpus erectus	Buttonwood	Prunus myrtifolia	West Indian cherry
Cordia sebestena	Geiger Tree	Psuedophoenix sargentii	Buccaneer palm, cherry palm
Dipholis salicifolia	Willow-leaved busic		

Eugenia spp.	Stoppers	Reynosia sptentrionalis	Darling Plum
Exostema caribaeum	Princewood	Rhizophora mangle	Red mangrove
Ficus aurea	Strangler Fig	Thrinax radiata	Florida thatch palm
Ficus citrifolia	Shortleaf Fig	Sabal palmetto	Cabbage palmetto, sabal palm
Guaiacum sanctum	Lignum Vitae	Schaefferia frutescens	Florida boxwood
Guapira discolor	Blolly	Swietenia mahogani	Mahogany
Guettarda elliptica	Everglades velvetseed	Thrinax morrisii	Key Thatch Palm
Guettarda scabra	Rough velvetseed	Zanthoxylum fagara	Wild lime

** The list is by no means a complete inventory of the subtropical or tropical tree species that are native to South Florida or the Florida Keys. For a determination of what constitutes a regulated tree, contact the City Biologist.*

Table 106.12.2

Prohibited Invasive Exotic List

Latin Name	Common Name
Casuarinia equisetifolia	Australian Pine
Colubrina asiatica	Leather leaf, asiatic colubrina
Ficus microcarpa	Laurel fig

Neyraudia reynaudiana	Silk reed, cane grass, burma reed
Scaevola sericea	Beach naupaka
Schefflera actinophylla	Schefflera
Schinus terbinthifolius	Brazilian Pepper
Thespesia populnea	<i>Seaside Mahoe</i>



For more information on
invasive exotic plants
including links to related
web pages, visit:

www.fleppc.org

FLEPPC List Definitions:

Exotic—a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida. **Native**—a species whose natural range includes Florida. **Naturalized exotic**—an exotic that sustains itself outside cultivation (it is still exotic; it has not “become” native).

Invasive exotic— an exotic that has not only naturalized, but is expanding on its own in Florida native plant communities.

Zone: N = north, C = central, S = south, Referring to each species’ general distribution in regions of Florida (not its potential range in the state). Please refer to the map below.



Citation example:

FLEPPC. 2019 List of Invasive Plant Species.
Florida Exotic Pest Plant Council. Internet: www.fleppc.org

The 2019 list was prepared by the FLEPPC Plant List Committee

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Florida Exotic Pest Plant Council’s 2019 List of Invasive Plant Species

The mission of the Florida Exotic Pest Plant Council is to reduce the impacts of invasive plants in Florida through the exchange of scientific, educational, and technical information.

Note: The FLEPPC List of Invasive Plant Species is not a regulatory list. Only those plants listed as Federal Noxious Weeds, Florida Noxious Weeds, Florida Prohibited Aquatic Plants, or in local ordinances are regulated by law.

Purpose of the List

To provide a list of plants determined by the Florida Exotic Pest Plant Council to be invasive in natural areas of Florida and routinely update the list based upon information of newly identified occurrences and changes in distribution over time. Also, to focus attention on:

- The adverse effects exotic pest plants have on Florida’s biodiversity and native plant communities,
- The habitat losses in natural areas from exotic pest plant infestations,
- The impacts on endangered species via habitat loss and alteration,
- The need for pest plant management,
- The socio-economic impacts of these plants (e.g., increased wildfires or flooding in certain areas),
- Changes in the severity of different pest plant infestations over time,
- Providing information to help managers set priorities for research and control programs.

www.fleppc.org

CATEGORY I

Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.

Scientific Name	Common Name	Zone	Scientific Name	Common Name	Zone
<i>Abrus precatorius</i>	rosary pea	C, S	<i>Melinis repens</i>	Natalgrass	C, S
<i>Acacia auriculiformis</i>	earleaf acacia	C, S	<i>Microsorium grossum</i> ⁴	serpent fern, wart fern	S
<i>Albizia julibrissin</i>	mimosa, silk tree	N, C	<i>Microstegium vimineum</i>	Japanese stiltgrass	N
<i>Albizia lebeckii</i>	woman's tongue	C, S	<i>Mimosa pigra</i>	catclaw mimosa	C, S
<i>Ardisia crenata</i>	coral ardisia	N, C, S	<i>Nandina domestica</i>	heavenly bamboo, nandina	N, C
<i>Ardisia elliptica</i>	shoebutton ardisia	C, S	<i>Nephrolepis brownii</i>	Asian sword fern	C, S
<i>Asparagus aethiopicus</i>	asparagus fern	N, C, S	<i>Nephrolepis cordifolia</i>	sword fern	N, C, S
<i>Bauhinia variegata</i>	orchid tree	C, S	<i>Neyraudia reynoudiana</i>	Burma reed	S
<i>Bischofia javanica</i>	bishopwood	C, S	<i>Nymphoides cristata</i>	crested floatingheart	C, S
<i>Calophyllum antillarum</i>	Santa Maria	S	<i>Paederia cruddasiana</i>	sewer vine	S
<i>Casuarina equisetifolia</i>	Australian-pine	N, C, S	<i>Paederia foetida</i>	skunk vine	N, C, S
<i>Casuarina glauca</i>	suckering Australian-pine	C, S	<i>Panicum repens</i>	torpedograss	N, C, S
<i>Cenchrus purpureus</i>	elephantgrass, Napier grass	N, C, S	<i>Pistia stratiotes</i>	water-lettuce	N, C, S
<i>(Pennisetum purpureum)</i>			<i>Psidium cattleianum</i>	stawberry guava	C, S
<i>Cinnamomum camphora</i>	camphor-tree	N, C, S	<i>Psidium guajava</i>	guava	C, S
<i>Colocasia esculenta</i>	wild taro	N, C, S	<i>Pueraria montana var. lobata</i>	kudzu	N, C, S
<i>Colubrina asiatica</i>	latherleaf	S	<i>Rhodomyrtus tomentosa</i>	downy rose-myrtle	C, S
<i>Cupaniopsis anacardioides</i>	carrotwood	C, S	<i>Ruellia simplex</i>	Mexican petunia	N, C, S
<i>Deparia petersenii</i>	Japanese false spleenwort	N, C	<i>Salvinia minima</i>	water spangles	N, C, S
<i>Dioscorea alata</i>	winged yam	N, C, S	<i>Scaevola taccada</i>	beach naupaka, half-flower	N, C, S
<i>Dioscorea bulbifera</i>	air potato	N, C, S	<i>Schefflera actinophylla</i>	schefflera, umbrella tree	C, S
<i>Dolichandra unguis-cati</i>	cat's-claw vine	N, C, S	<i>Schinus terebinthifolia</i>	Brazilian pepper	N, C, S
<i>(Macfadyena unguis-cati)</i>			<i>Scleria lacustris</i>	Wright's nutrush	C, S
<i>Elchornia crassipes</i>	water-hyacinth	N, C, S	<i>Scleria microcarpa</i> ⁵	tropical nutrush	C, S
<i>Eugenia uniflora</i>	Surinam cherry	C, S	<i>Senna pendula var. glabrata</i>	Christmas senna, climbing cassia	C, S
<i>Ficus microcarpa</i> ³	laurel fig	C, S	<i>Solanum tampicense</i>	wetland night shade	C, S
<i>Hydrilla verticillata</i>	hydrilla	N, C, S	<i>Solanum viarum</i>	tropical soda apple	N, C, S
<i>Hydrophyllum polysperma</i>	green hygro	N, C, S	<i>Sporobolus jacquemontii</i>	West Indian dropseed	C, S
<i>Hymenocallis amplexicaulis</i>	West Indian marsh grass	N, C, S	<i>Syngonium podophyllum</i>	arrowhead vine	N, C, S
<i>Imperata cylindrica</i>	cogongrass	N, C, S	<i>Syzygium cumini</i>	Java plum	C, S
<i>Ipomoea aquatica</i>	water-spinach	C	<i>Tectaria incisa</i>	incised halberd fern	S
<i>Jasminum dichotomum</i>	Gold Coast jasmine	C, S	<i>Thelypteris opulenta</i>	jeweled maidenhair fern	S
<i>Jasminum fluminense</i>	Brazilian Jasmine	C, S	<i>Thespesia populnea</i>	seaside mahoe	C, S
<i>Lantana strigocamara</i> ²	lantana, shrub verbena	N, C, S	<i>Tradescantia fluminensis</i>	small-leaf spiderwort	N, C
<i>Ligustrum lucidum</i>	glossy privet	N, C	<i>Tradescantia spathacea</i>	oyster plant	C, S
<i>Ligustrum sinense</i>	Chinese privet	N, C, S	<i>Tridax sebifera</i>	Chinese tallow-tree	N, C, S
<i>Lonicera japonica</i>	Japanese honeysuckle	N, C, S	<i>(Sapum sebiferum)</i>		
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	N, C, S	<i>Urena lobata</i>	Caesar's weed	N, C, S
<i>Lumnitzera racemosa</i>	black mangrove	S	<i>Urochloa mutica</i>	paragrass	N, C, S
<i>Luziola subintegra</i>	Tropical American watergrass	S	<i>Vitex rotundifolia</i>	beach vitex	N
<i>Lygodium japonicum</i>	Japanese climbing fern	N, C, S			
<i>Lygodium microphyllum</i>	Old World climbing fern	N, C, S			
<i>Manihara zapota</i>	sapodilla	S			
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	C, S			

¹ Does not include *Ficus microcarpa* var. *fuyensis*, which is sold as "green island ficus".

² Historically this non-native has been referred to as *Lantana camara*, a species not known to occur in Florida.

³ Does not include the native endemic *Spermacoce neoterminalis*.

⁴ *Microsorium grossum* has been previously misidentified as *Microsorium scolopendria*.

⁵ Added to the FLEPPC List of Invasive Species in 2019.

Plant names are those published in the Atlas of Florida Plants (<http://www.florida.plantatlas.usf.edu>). For historical species nomenclature see "Guide to Vascular Plants of Florida Third Edition." Wunderlin and Hansen, University of Florida Press. 2011.

CATEGORY II

Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category 1 species. These species may become Category 1 if ecological damage is demonstrated.

Scientific Name	Common Name	Zone	Scientific Name	Common Name	Zone
<i>Adenanthura pavonina</i>	red sandalwood	S	<i>Koeleria elegans</i> subsp. <i>formosana</i>	flamegold tree	C, S
<i>Agave sisalana</i>	sisal hemp	C, S	<i>Landoltia punctata</i>	spotted duckweed	N, C, S
<i>Alstonia macrophylla</i>	devil tree	S	<i>Leucaena leucocephala</i>	leadtree	N, C, S
<i>Alternanthera philoxeroides</i>	alligatorweed	N, C, S	<i>Limnophila sessiliflora</i>	Asian marshweed	N, C, S
<i>Antigonon leptopus</i>	coral vine	N, C, S	<i>Livistona chinensis</i>	Chinese fan palm	C, S
<i>Ardisia japonica</i>	Japanese ardisia	N	<i>Macroptilium lathyroides</i>	wild bushbean	N, C, S
<i>Aristolochia elegans</i>	calico flower	N, C, S	<i>Melaleuca viminalis</i>	bottlebrush	C, S
<i>(Aristolochia littoralis)</i>			<i>(Callistemon viminalis)</i>		
<i>Asystasia gangetica</i>	Ganges primrose	C, S	<i>Melia azedarach</i>	Chinaberry	N, C, S
<i>Begonia cucullata</i>	wax begonia	N, C, S	<i>Melinis minutiflora</i>	molasses grass	C, S
<i>Broussonetia papyrifera</i>	paper mulberry	N, C, S	<i>Mikania micrantha</i>	mile-a-minute vine	S
<i>Bruguiera gymnorhiza</i>	large-leafed mangrove	S	<i>Momordica charantia</i>	balsam-apple	N, C, S
<i>Callisia fragrans</i>	Inch plant	C, S	<i>Muraya paniculata</i>	orange-jessamine	S
<i>Casuarina cunninghamiana</i>	river sheoak	C, S	<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	N, C, S
<i>Cecropia palmata</i>	trumpet tree	S	<i>Passiflora biflora</i>	twin-flowered passion vine	S
<i>Cenchrus polystachios</i>	mission grass	S	<i>Phoenix reclinata</i>	Senegal date palm	C, S
<i>(Pennisetum polystachios)</i>			<i>Phyllostachys aurea</i>	golden bamboo	N, C
<i>Cenchrus setaceus</i>	fountain grass	S	<i>Pittosporum pentandrum</i>	Taiwanese cheesewood	S
<i>(Pennisetum setaceum)</i>			<i>Platyterium bifurcatum</i>	staghorn fern	S
<i>Cestrum diurnum</i>	day jessamine	C, S	<i>Praxelis clematidea</i>	praxelis	C
<i>Chamaedorea seifrizii</i>	bamboo palm	S	<i>Pteris vittata</i>	Chinese brake, ladder brake	N, C, S
<i>Clematis ternstroffia</i>	Japanese clematis	N, C	<i>Ptychosperma elegans</i>	solitary palm	S
<i>Cocos nucifera</i>	coconut palm	S	<i>Richardia grandiflora</i>	largeflower Mexican clover	N, C, S
<i>Crassocephalum crepidioides</i>	redflower ragleaf	C, S	<i>Ricinus communis</i>	castorbean	N, C, S
<i>Cryptostegia madagascariensis</i>	Madagascar rubbervine	C, S	<i>Rotala rotundifolia</i>	dwarf rotala, roundleaf toothcup	S
<i>Cyperus involucreatus</i>	umbrella plant	C, S	<i>Ruellia blechum</i>	green shrimp plant	N, C, S
<i>Cyperus proflifer</i>	dwarf papyrus	C, S	<i>Sesbania punicea</i>	rattlebox	N, C, S
<i>Dactyloctenium aegyptium</i>	Durban crow's-foot grass	C, S	<i>Sida planicaulis</i>	mata-pasto	C, S
<i>Dalbergia sissoo</i>	Indian rosewood, sissoo	C, S	<i>Solanum elaeagnifolium</i>	twinleaf nightshade	N, C, S
<i>Dalechampia scandens</i> ⁶	spurge-creeper	S	<i>Solanum torvum</i>	turkey berry	N, C, S
<i>Distimake tuberosus</i>	Spanish arbor vine, wood-rose	C, S	<i>Spermacoce verticillata</i> ⁷	shrubby false buttonweed	C, S
<i>(Merremia tuberosa)</i>			<i>Sphagnetalia trilobata</i>	wedelia	N, C, S
<i>Dracaena hyacinthoides</i>	bowstring hemp	C, S	<i>Stachytarpheta cayennensis</i>	nettle-leaf porterweed	S
<i>(Sansevieria hyacinthoides)</i>			<i>Syagrus romanzoffiana</i>	queen palm	C, S
<i>Elaeagnus pungens</i>	silverthorn, thorny olive	N, C	<i>Syzygium jambos</i>	Malabar plum, rose-apple	N, C, S
<i>Elaeagnus umbellata</i>	autumn olive, silverberry	N	<i>Talipariti tiliaceum</i>	mahoe, sea hibiscus	C, S
<i>Epipremnum pinnatum</i> cv. <i>'Aureum'</i>	pothos	C, S	<i>Terminalia catappa</i>	tropical-almond	C, S
<i>Eulophia graminea</i>	Chinese crown orchid	C, S	<i>Terminalia muelleri</i>	Australian-almond	C, S
<i>Ficus altissima</i>	council tree, false banyan	S	<i>Tribulus cistoides</i>	puncture vine, burr-nut	N, C, S
<i>Flacourtia indica</i>	governor's plum	S	<i>Urochloa maxima</i>	Guineagrass	N, C, S
<i>Hemarthria altissima</i>	limpograss	C, S	<i>(Panicum maximum)</i>		
<i>Heteropteryx brachystata</i>	redwing	S	<i>Vernicia fordii</i>	tung-oil tree	N, C, S
<i>Hyparrhenia rufa</i>	jaragua	N, C, S	<i>Vitex trifolia</i>	simple-leaf chastetree	C, S
<i>Ipomoea carnea</i> subsp. <i>fastuosa</i>	shrub morning-glory	C, S	<i>Washingtonia robusta</i>	Washington fan palm	C, S
<i>Kalanchoe x houghtonii</i>	mother of millions	N, C, S	<i>Wisteria sinensis</i>	Chinese wisteria	N, C
<i>Kalanchoe pinnata</i>	life plant	C, S	<i>Xanthosoma sagittifolium</i>	malanga, elephant ear	N, C, S



(Default.aspx)

 Scientific Name
[Q Advanced Search \(/search.aspx\)](/search.aspx) [Search Help](#)
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Plant Photos


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Institute for Systematic Botany

The Institute for Systematic Botany of the Cell Biology, Microbiology, and Molecular Biology Department at the University of South Florida was established in 1990 to promote basic research in plant systematics and to coordinate research, educational and service programs in plant systematics.

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Outside Links

Links to other plant related resources.

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About the Plant Atlas

Florida has over 4,700 species of native or naturalized plants in Florida, including over 4,300 species of vascular plants and over 400 species of bryophytes (plants known only from cultivation are not included). The Atlas of Florida Plants is a joint effort by the Institute for Systematic Botany, the University of South Florida, and the USF Water Institute to provide a comprehensive searchable database of plants in the state of Florida. This website also provides access to the [USF Herbarium](#)

Plant Search

Use the form below to search or browse for plants. For complex queries, please use the Advanced Search button.

 Scientific Name
 Action: [Search](#) | [Browse](#)
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Specimen Search

The USF Herbarium has over 195,000 specimens digitized and we're adding more each day.

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GUIDE TO THE MOSSES OF CENTRAL FLORIDA WITH AN INTERACTIVE KEY (/DOCUMENTS/GUIDE-TO- THE-MOSSES-OF-CENTRAL- FLORIDA.PDF)

by Frederick B. Essig

This guide has been prepared as an adjunct to the Atlas of Florida Plants and presently focuses on the common mosses of central Florida. Currently a work in progress—please send corrections and suggestions to Frederick B. Essig at essig@usf.edu (<mailto:essig@usf.edu>).

Atlas Statistics

Number of Plant Species

4,847



NEW BUSINESS #2

Number of Native Species	3,307
Number of Non-Native Species	1,540
Number of Plant Images	18,797
Number of Specimens Digitized	231,097

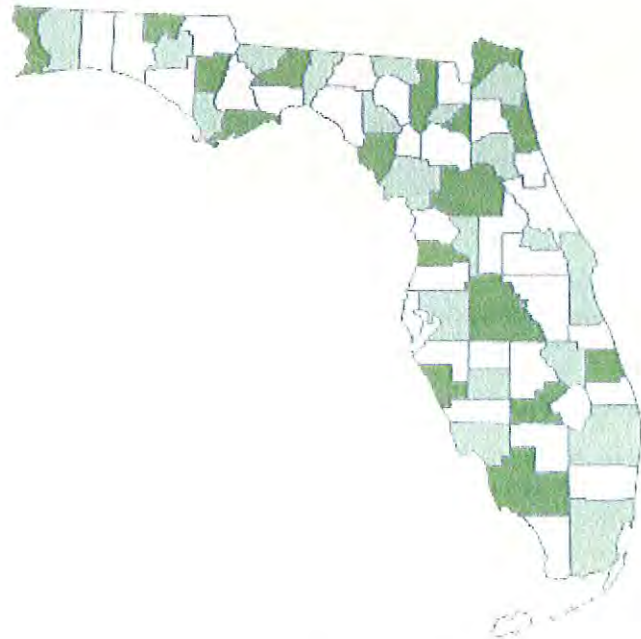
(<http://florida.plantatlas.usf.edu/Specimen.aspx>), which houses about 300,000 specimens from around the world (about 2/3 of these are databased and available online).

[Learn more about the Plant Atlas » \(/about\)](#)

Browse the Plant Atlas By Map



Select a county below to view plant species for that county. Hover over a county to view the county name.



How to link to the Plant Atlas

The Plant Atlas has been designed to allow external websites to dynamically link to individual species and issue URL-based searches. This method allows you to link to the Atlas without knowing individual unique species identifiers.

1. Use the following syntax to link to a species page on the Atlas:
<http://www.florida.plantatlas.usf.edu/Results.aspx?q=Genus+species>
2. Search for species within a specific family (and link to family page) using this syntax:
<http://www.florida.plantatlas.usf.edu/Results.aspx?cat=family&text=Orchidaceae>
(<http://www.florida.plantatlas.usf.edu/Results.aspx?cat=family&text=Orchidaceae>)
3. Use the following syntax to search for a specific genus:
<http://www.florida.plantatlas.usf.edu/Results.aspx?cat=genus&text=Abrus>
(<http://www.florida.plantatlas.usf.edu/Results.aspx?cat=genus&text=Abrus>)

[Click here to see examples »](#)

For more information, contact: **Richard Wunderlin** (<mailto:rwunder@usf.edu>) or **Bruce Hansen** (<mailto:hansen@usf.edu>), or **Alan Franck** (<mailto:afranck@fiu.edu>).

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Records are being filtered, turn off?

Displaying records 1-250 of 1,142

1

Record Format	Scientific Name	Common Name	Family	Genus	Herbarium Specimens	Photo	Compare
Accepted Name							
Accepted Name	Abrus precatorius	ROSARY PEA; BLACKEYED SUSAN	FABACEAE	Abrus	✓		☐
Accepted Name	Abutilon theophrasti	VELVETLEAF; BUTTERPRINT	MALVACEAE	Abutilon	✓		☐
Accepted Name	Acacia auriculiformis	EARLEAF ACACIA	FABACEAE	Acacia	✓		☐
Accepted Name	Acalypha arvensis	FIELD COPPERLEAF	EUPHORBIACEAE	Acalypha	✓		☐
Accepted Name	Acalypha gracilens	SLENDER THREESEED MERCURY	EUPHORBIACEAE	Acalypha	✓		☐
Accepted Name	Acanthocereus tetragonus	TRIANGLE CACTUS; DILDOE CACTUS; BARBED-WIRE CACTUS	CACTACEAE	Acanthocereus	✓		☐
Accepted Name	Acer rubrum	RED MAPLE	SAPINDACEAE	Acer	✓		☐
Accepted Name	Acrostichum aureum	GOLDEN LEATHER FERN	PTERIDACEAE	Acrostichum	✓		☐
Accepted Name	Acrostichum danaeifolium	GIANT LEATHER FERN	PTERIDACEAE	Acrostichum	✓		☐
Accepted Name	Adenanthera pavonina	RED BEADTREE; RED SANDALWOOD	FABACEAE	Adenanthera	✓		☐
Accepted Name	Aeschynomene americana	SHYLEAF	FABACEAE	Aeschynomene	✓		☐
Accepted Name	Aeschynomene pratensis var. pratensis	MEADOW JOINTVETCH	FABACEAE	Aeschynomene	✓		☐
Accepted Name	Agalinis fasciculata	BEACH FALSE FOXGLOVE	OROBANCHACEAE	Agalinis	✓		☐
Accepted Name	Agalinis filifolia	SEMINOLE FALSE FOXGLOVE	OROBANCHACEAE	Agalinis	✓		☐
Accepted Name	Agalinis linifolia	FLAXLEAF FALSE FOXGLOVE	OROBANCHACEAE	Agalinis	✓		☐
Accepted Name	Agave decipiens	FALSE SISAL	AGAVACEAE	Agave	✓		☐
Accepted Name	Agave weberi	WILD CENTURY PLANT	AGAVACEAE	Agave	✓		☐
Accepted Name	Ageratina jucunda	HAMMOCK SNAKEROOT	ASTERACEAE	Ageratina	✓		☐
Accepted Name	Ageratum conyzoides	TROPICAL WHITEWEED	ASTERACEAE	Ageratum	✓		☐
Accepted Name	Ageratum houstonianum	BLUEMINK	ASTERACEAE	Ageratum	✓		☐
Accepted Name	Albizia lebeck	WOMAN'S TONGUE	FABACEAE	Albizia	✓		☐
Accepted Name	Aletris lutea	YELLOW COLICROOT	NARTHECIACEAE	Aletris	✓		☐
Accepted Name	Allamanda cathartica	GOLDEN TRUMPET; BROWNBUD ALLAMANDA	APOCYNACEAE	Allamanda	✓		☐
Accepted Name	Alstonia scholaris	DITA; WHITE CHEESEWOOD	APOCYNACEAE	Alstonia	✓		☐
Accepted Name	Alternanthera flavescens	YELLOW JOYWEED	AMARANTHACEAE	Alternanthera	✓		☐
Accepted Name	Alternanthera maritima	SEASIDE JOYWEED	AMARANTHACEAE	Alternanthera	✓		☐
Accepted Name	Alternanthera paronichyoides	SMOOTH JOYWEED	AMARANTHACEAE	Alternanthera	✓		☐
Accepted Name	Alternanthera philoxeroides	ALLIGATORWEED	AMARANTHACEAE	Alternanthera	✓		☐
Accepted Name	Alysicarpus ovalifolius	FALSE MONEYWORT; ALYCE CLOVER	FABACEAE	Alysicarpus	✓		☐
Accepted Name	Alysicarpus vaginalis	WHITE MONEYWORT	FABACEAE	Alysicarpus	✓		☐
Accepted Name	Amaranthus australis	SOUTHERN AMARANTH	AMARANTHACEAE	Amaranthus	✓		☐
Accepted Name	Amaranthus blitum subsp. emarginatus	PURPLE AMARANTH	AMARANTHACEAE	Amaranthus	✓		☐
Accepted Name	Amaranthus hybridus	SLIM AMARANTH; PIGWEED	AMARANTHACEAE	Amaranthus	✓		☐
Accepted Name	Amaranthus spinosus	SPINY AMARANTH	AMARANTHACEAE	Amaranthus	✓		☐

NEW BUSINESS #2

Accepted Name	<u><i>Amaranthus viridis</i></u>	SLENDER AMARANTH	AMARANTHACEAE	<u><i>Amaranthus</i></u>	✓		☐
Accepted Name	<u><i>Ambrosia artemisiifolia</i></u>	COMMON RAGWEED	ASTERACEAE	<u><i>Ambrosia</i></u>	✓		☐
Accepted Name	<u><i>Ammannia latifolia</i></u>	PINK REDSTEM; TOOTHCUPS	LYTHRACEAE	<u><i>Ammannia</i></u>	✓		☐
Accepted Name	<u><i>Ammi majus</i></u>	LARGE BULLWORT	APIACEAE	<u><i>Ammi</i></u>	✓		☐
Accepted Name	<u><i>Amorpha fruticosa</i></u>	BASTARD FALSE INDIGO	FABACEAE	<u><i>Amorpha</i></u>	✓		☐
Accepted Name	<u><i>Amphicarpum muehlenbergianum</i></u>	BLUE MAIDENCANE	POACEAE	<u><i>Amphicarpum</i></u>	✓		☐
Accepted Name	<u><i>Amphitecna latifolia</i></u>	BLACK CALABASH	BIGNONIACEAE	<u><i>Amphitecna</i></u>	✓		☐
Accepted Name	<u><i>Amyris elemifera</i></u>	SEA TORCHWOOD	RUTACEAE	<u><i>Amyris</i></u>	✓		☐
Accepted Name	<u><i>Andropogon brachystachyus</i></u>	SHORTSPIKE BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon floridanus</i></u>	FLORIDA BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon glomeratus</i> var. <i>glaucopsis</i></u>	PURPLE BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon glomeratus</i> var. <i>pumilus</i></u>	BUSHY BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon ternarius</i></u>	SPLITBEARD BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon virginicus</i> var. <i>deciplens</i></u>	BROOMSEDGE BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon virginicus</i> var. <i>glaucus</i></u>	CHALKY BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Andropogon virginicus</i> var. <i>virginicus</i></u>	BROOMSEDGE BLUESTEM	POACEAE	<u><i>Andropogon</i></u>	✓		☐
Accepted Name	<u><i>Anemia adiantifolia</i></u>	MAIDENHAIR PINELAND FERN	SCHIZAEACEAE	<u><i>Anemia</i></u>	✓		☐
Accepted Name	<u><i>Aneura pinguis</i></u>		ANEURACEAE	<u><i>Aneura</i></u>			☐
Accepted Name	<u><i>Annona glabra</i></u>	POND APPLE	ANNONACEAE	<u><i>Annona</i></u>	✓		☐
Accepted Name	<u><i>Antigonon leptopus</i></u>	CORAL VINE; QUEEN'S JEWELS	POLYGONACEAE	<u><i>Antigonon</i></u>	✓		☐
Accepted Name	<u><i>Aplos americana</i></u>	GROUNDNUT	FABACEAE	<u><i>Aplos</i></u>	✓		☐
Accepted Name	<u><i>Apteria aphylla</i></u>	NODDING NIXIE	BURMANNIACEAE	<u><i>Apteria</i></u>	✓		☐
Accepted Name	<u><i>Ardisia crenata</i></u>	SCRATCHTHROAT	MYRSINACEAE	<u><i>Ardisia</i></u>	✓		☐
Accepted Name	<u><i>Ardisia escallonioides</i></u>	MARLBERRY	MYRSINACEAE	<u><i>Ardisia</i></u>	✓		☐
Accepted Name	<u><i>Argemone mexicana</i></u>	MEXICAN PRICKLYPOPPY	PAPAVERACEAE	<u><i>Argemone</i></u>	✓		☐
Accepted Name	<u><i>Arisaema triphyllum</i></u>	JACK-IN-THE-PULPIT	ARACEAE	<u><i>Arisaema</i></u>	✓		☐
Accepted Name	<u><i>Aristida palustris</i></u>	LONGLEAF THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida patula</i></u>	TALL THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida purpurascens</i> var. <i>purpurascens</i></u>	ARROWFEATHER THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida purpurascens</i> var. <i>tenuispica</i></u>	HILLSBORO THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida rhizomophora</i></u>	FLORIDA THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida spiciformis</i></u>	BOTTLEBRUSH THREEAWN	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Aristida stricta</i></u>	WIREGRASS	POACEAE	<u><i>Aristida</i></u>	✓		☐
Accepted Name	<u><i>Arnoglossum ovatum</i></u>	OVATELEAF INDIAN PLANTAIN	ASTERACEAE	<u><i>Arnoglossum</i></u>	✓		☐
Accepted Name	<u><i>Asclepias curassavica</i></u>	SCARLET MILKWEED; BLOODFLOWER	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias curtissii</i></u>	CURTISS' MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias incarnata</i></u>	SWAMP MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias lanceolata</i></u>	FEWFLOWER MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias pedicellata</i></u>	SAVANNAH MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias tuberosa</i></u>	BUTTERFLYWEED; BUTTERFLY MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asclepias verticillata</i></u>	WHORLED MILKWEED	APOCYNACEAE	<u><i>Asclepias</i></u>	✓		☐
Accepted Name	<u><i>Asemelia violacea</i></u>	SHOWY MILKWORT	POLYGALACEAE	<u><i>Asemelia</i></u>	✓		☐
Accepted Name	<u><i>Asimina reticulata</i></u>	NETTED PAWPAW	ANNONACEAE	<u><i>Asimina</i></u>	✓		☐
Accepted Name	<u><i>Asimina tetramera</i></u>	FOURPETAL PAWPAW	ANNONACEAE	<u><i>Asimina</i></u>	✓		☐

NEW BUSINESS #2

Accepted Name	<u><i>Asparagus aethiopicus</i></u>	SPRENGER'S ASPARAGUS-FERN	<u>ASPARGACEAE</u>	<u><i>Asparagus</i></u>	✓		☐
Accepted Name	<u><i>Asplenium dentatum</i></u>	TOOTHED SPLEENWORT; SLENDER SPLEENWORT	<u>ASPLENIACEAE</u>	<u><i>Asplenium</i></u>	✓		☐
Accepted Name	<u><i>Asystasia gangetica</i> subsp. <i>gangetica</i></u>	CHINESE VIOLET	<u>ACANTHACEAE</u>	<u><i>Asystasia</i></u>			☐
Accepted Name	<u><i>Atriplex pentandra</i></u>	CRESTED SALTBUCH	<u>AMARANTHACEAE</u>	<u><i>Atriplex</i></u>	✓		☐
Accepted Name	<u><i>Ayenia euphrasiifolia</i></u>	EYEBRIGHT AYENIA	<u>MALVACEAE</u>	<u><i>Ayenia</i></u>	✓		☐
Accepted Name	<u><i>Azolla filiculoides</i></u>	AMERICAN WATERFERN; PACIFIC MOSQUITOFERN	<u>AZOLLACEAE</u>	<u><i>Azolla</i></u>	✓		☐
Accepted Name	<u><i>Azolla pinnata</i></u>	FEATHERED MOSQUITOFERN	<u>AZOLLACEAE</u>	<u><i>Azolla</i></u>	✓		☐
Accepted Name	<u><i>Baccharis glomeruliflora</i></u>	SILVERLING	<u>ASTERACEAE</u>	<u><i>Baccharis</i></u>	✓		☐
Accepted Name	<u><i>Baccharis halimifolia</i></u>	GROUNDSEL TREE; SEA MYRTLE	<u>ASTERACEAE</u>	<u><i>Baccharis</i></u>	✓		☐
Accepted Name	<u><i>Bacopa caroliniana</i></u>	LEMON BACOPA; BLUE WATERHYSSOP	<u>PLANTAGINACEAE</u>	<u><i>Bacopa</i></u>	✓		☐
Accepted Name	<u><i>Bacopa innominata</i></u>	TROPICAL WATERHYSSOP	<u>PLANTAGINACEAE</u>	<u><i>Bacopa</i></u>	✓		☐
Accepted Name	<u><i>Bacopa monnieri</i></u>	HERB-OF-GRACE	<u>PLANTAGINACEAE</u>	<u><i>Bacopa</i></u>	✓		☐
Accepted Name	<u><i>Balduina angustifolia</i></u>	COASTAL PLAIN HONEYCOMBHEAD	<u>ASTERACEAE</u>	<u><i>Balduina</i></u>	✓		☐
Accepted Name	<u><i>Bambusa vulgaris</i></u>	COMMON BAMBOO	<u>POACEAE</u>	<u><i>Bambusa</i></u>	✓		☐
Accepted Name	<u><i>Bartonia virginica</i></u>	YELLOW SCREWSTEM	<u>GENTIANACEAE</u>	<u><i>Bartonia</i></u>	✓		☐
Accepted Name	<u><i>Bejaria racemosa</i></u>	TARFLOWER	<u>ERICACEAE</u>	<u><i>Bejaria</i></u>	✓		☐
Accepted Name	<u><i>Bidens alba</i></u>	BEGGARTICKS; ROMERILLO	<u>ASTERACEAE</u>	<u><i>Bidens</i></u>	✓		☐
Accepted Name	<u><i>Bidens mitis</i></u>	SMALLFRUIT BEGGARTICKS	<u>ASTERACEAE</u>	<u><i>Bidens</i></u>	✓		☐
Accepted Name	<u><i>Bigelovia nudata</i> subsp. <i>australis</i></u>	PINELAND RAYLESS GOLDENROD	<u>ASTERACEAE</u>	<u><i>Bigelovia</i></u>	✓		☐
Accepted Name	<u><i>Bischofia javanica</i></u>	JAVANESE BISHOPWOOD	<u>PHYLLANTHACEAE</u>	<u><i>Bischofia</i></u>	✓		☐
Accepted Name	<u><i>Bletia purpurea</i></u>	PINEPINK	<u>ORCHIDACEAE</u>	<u><i>Bletia</i></u>	✓		☐
Accepted Name	<u><i>Blutaparon vermiculare</i></u>	SAMPHIRE; SILVERHEAD	<u>AMARANTHACEAE</u>	<u><i>Blutaparon</i></u>	✓		☐
Accepted Name	<u><i>Boehmeria cylindrica</i></u>	FALSE NETTLE; BOG HEMP	<u>URTICACEAE</u>	<u><i>Boehmeria</i></u>	✓		☐
Accepted Name	<u><i>Boerhavia diffusa</i></u>	RED SPIDERLING; WINEFLOWER	<u>NYCTAGINACEAE</u>	<u><i>Boerhavia</i></u>	✓		☐
Accepted Name	<u><i>Bolboschoenus robustus</i></u>	SALTMARSH BULRUSH	<u>CYPERACEAE</u>	<u><i>Bolboschoenus</i></u>	✓		☐
Accepted Name	<u><i>Boltonia diffusa</i></u>	SMALLHEAD DOLL'S DAISY	<u>ASTERACEAE</u>	<u><i>Boltonia</i></u>	✓		☐
Accepted Name	<u><i>Borrchia frutescens</i></u>	BUSHY SEASIDE OXEYE	<u>ASTERACEAE</u>	<u><i>Borrchia</i></u>	✓		☐
Accepted Name	<u><i>Brassica juncea</i></u>	INDIA MUSTARD; LEAF MUSTARD	<u>BRASSICACEAE</u>	<u><i>Brassica</i></u>	✓		☐
Accepted Name	<u><i>Brassica rapa</i></u>	RAPE; TURNIP	<u>BRASSICACEAE</u>	<u><i>Brassica</i></u>	✓		☐
Accepted Name	<u><i>Buchnera americana</i></u>	AMERICAN BLUEHEARTS	<u>OROBANCHACEAE</u>	<u><i>Buchnera</i></u>	✓		☐
Accepted Name	<u><i>Buddleja indica</i></u>	INDOOR OAK	<u>SCROPHULARIACEAE</u>	<u><i>Buddleja</i></u>	✓		☐
Accepted Name	<u><i>Bulbostylis barbata</i></u>	WATERGRASS	<u>CYPERACEAE</u>	<u><i>Bulbostylis</i></u>	✓		☐
Accepted Name	<u><i>Bulbostylis ciliatifolia</i></u>	CAPILLARY HAIRSEDE	<u>CYPERACEAE</u>	<u><i>Bulbostylis</i></u>	✓		☐
Accepted Name	<u><i>Bulbostylis stenophylla</i></u>	SANDYFIELD HAIRSEDE	<u>CYPERACEAE</u>	<u><i>Bulbostylis</i></u>	✓		☐
Accepted Name	<u><i>Bulbostylis wari</i></u>	WARE'S HAIRSEDE	<u>CYPERACEAE</u>	<u><i>Bulbostylis</i></u>	✓		☐
Accepted Name	<u><i>Burmannia biflora</i></u>	BLUETHREAD	<u>BURMANNIACEAE</u>	<u><i>Burmannia</i></u>	✓		☐
Accepted Name	<u><i>Burmannia capitata</i></u>	SOUTHERN BLUETHREAD	<u>BURMANNIACEAE</u>	<u><i>Burmannia</i></u>	✓		☐
Accepted Name	<u><i>Bursera simaruba</i></u>	GUMBO LIMBO	<u>BURSERACEAE</u>	<u><i>Bursera</i></u>	✓		☐
Accepted Name	<u><i>Cabomba caroliniana</i></u>	CAROLINA FANWORT	<u>CABOMBACEAE</u>	<u><i>Cabomba</i></u>	✓		☐
Accepted Name	<u><i>Caesalpinia crista</i></u>	YELLOW NICKER	<u>FABACEAE</u>	<u><i>Caesalpinia</i></u>	✓		☐
Accepted Name	<u><i>Cakile lanceolata</i></u>	COASTAL SEAROCKET	<u>BRASSICACEAE</u>	<u><i>Cakile</i></u>	✓		☐
Accepted Name	<u><i>Callicarpa americana</i></u>	AMERICAN BEAUTYBERRY	<u>LAMIACEAE</u>	<u><i>Callicarpa</i></u>	✓		☐
Accepted Name	<u><i>Callicostella pallida</i></u>		<u>PILOTICACEAE</u>	<u><i>Callicostella</i></u>			☐
Accepted Name	<u><i>Callisia cordifolia</i></u>	FLORIDA ROSELING	<u>COMMELINACEAE</u>	<u><i>Callisia</i></u>	✓		☐

NEW BUSINESS #2

Accepted Name	<u><i>Callisia fragrans</i></u>	BASKETPLANT	COMMELINACEAE	<u><i>Callisia</i></u>	✓		☐
Accepted Name	<u><i>Callisia ornata</i></u>	FLORIDA SCRUB ROSELING	COMMELINACEAE	<u><i>Callisia</i></u>	✓		☐
Accepted Name	<u><i>Calopogon barbatus</i></u>	BEARDED GRASSPINK	ORCHIDACEAE	<u><i>Calopogon</i></u>	✓		☐
Accepted Name	<u><i>Calopogon pallidus</i></u>	PALE GRASSPINK	ORCHIDACEAE	<u><i>Calopogon</i></u>	✓		☐
Accepted Name	<u><i>Calopogon tuberosus</i> var. <i>tuberosus</i></u>	TUBEROUS GRASSPINK	ORCHIDACEAE	<u><i>Calopogon</i></u>	✓		☐
Accepted Name	<u><i>Calymperes afzelii</i></u>		CALYMPERACEAE	<u><i>Calymperes</i></u>			☐
Accepted Name	<u><i>Calymperes palisotii</i></u>		CALYMPERACEAE	<u><i>Calymperes</i></u>			☐
Accepted Name	<u><i>Calypocarpus vialis</i></u>	STRAGGLER DAISY	ASTERACEAE	<u><i>Calypocarpus</i></u>	✓		☐
Accepted Name	<u><i>Calystegia sepium</i> subsp. <i>limnophila</i></u>	HEDGE FALSE BINDWEED	CONVOLVULACEAE	<u><i>Calystegia</i></u>	✓		☐
Accepted Name	<u><i>Campsis radicans</i></u>	TRUMPET CREEPER	BIGNONIACEAE	<u><i>Campsis</i></u>	✓		☐
Accepted Name	<u><i>Campyloneurum phyllitidis</i></u>	LONG STRAP FERN	POLYPODIACEAE	<u><i>Campyloneurum</i></u>	✓		☐
Accepted Name	<u><i>Canavalia rosea</i></u>	BAYBEAN; SEASIDE JACKBEAN	FABACEAE	<u><i>Canavalia</i></u>	✓		☐
Accepted Name	<u><i>Canna flaccida</i></u>	BANDANNA-OF-THE-EVERGLADES	CANNACEAE	<u><i>Canna</i></u>	✓		☐
Accepted Name	<u><i>Cannabis sativa</i></u>	HEMP; MARIJUANA	CANNABACEAE	<u><i>Cannabis</i></u>	✓		☐
Accepted Name	<u><i>Caperonia palustris</i></u>	SACATRAPO	EUPHORBIACEAE	<u><i>Caperonia</i></u>	✓		☐
Accepted Name	<u><i>Capsicum annuum</i> var. <i>glabriusculum</i></u>	BIRD PEPPER	SOLANACEAE	<u><i>Capsicum</i></u>	✓		☐
Accepted Name	<u><i>Capsicum frutescens</i></u>	TABASCO PEPPER	SOLANACEAE	<u><i>Capsicum</i></u>	✓		☐
Accepted Name	<u><i>Cardamine pensylvanica</i></u>	PENNSYLVANIA BITTERCRESS	BRASSICACEAE	<u><i>Cardamine</i></u>	✓		☐
Accepted Name	<u><i>Carex longii</i></u>	LONG'S SEDGE	CYPERACEAE	<u><i>Carex</i></u>	✓		☐
Accepted Name	<u><i>Carex verrucosa</i></u>	WARTY SEDGE	CYPERACEAE	<u><i>Carex</i></u>	✓		☐
Accepted Name	<u><i>Carex vexans</i></u>	FLORIDA HAMMOCK SEDGE	CYPERACEAE	<u><i>Carex</i></u>	✓		☐
Accepted Name	<u><i>Carica papaya</i></u>	PAPAYA	CARICACEAE	<u><i>Carica</i></u>	✓		☐
Accepted Name	<u><i>Carphephorus carnosus</i></u>	PINELAND CHAFFHEAD	ASTERACEAE	<u><i>Carphephorus</i></u>	✓		☐
Accepted Name	<u><i>Carphephorus corymbosus</i></u>	COASTALPLAIN CHAFFHEAD; FLORIDA PAINTBRUSH	ASTERACEAE	<u><i>Carphephorus</i></u>	✓		☐
Accepted Name	<u><i>Carphephorus odoratissimus</i> var. <i>subtropicanus</i></u>	PINELAND PURPLE; FALSE VANILLALEAF	ASTERACEAE	<u><i>Carphephorus</i></u>	✓		☐
Accepted Name	<u><i>Carphephorus paniculatus</i></u>	HAIRY CHAFFHEAD	ASTERACEAE	<u><i>Carphephorus</i></u>	✓		☐
Accepted Name	<u><i>Carya aquatica</i></u>	WATER HICKORY	JUGLANDACEAE	<u><i>Carya</i></u>	✓		☐
Accepted Name	<u><i>Carya floridana</i></u>	SCRUB HICKORY	JUGLANDACEAE	<u><i>Carya</i></u>	✓		☐
Accepted Name	<u><i>Cassytha filiformis</i></u>	LOVE VINE; DEVIL'S GUT	LAURACEAE	<u><i>Cassytha</i></u>	✓		☐
Accepted Name	<u><i>Casuarina equisetifolia</i></u>	AUSTRALIAN-PINE; HORSETAIL CASUARINA	CASUARINACEAE	<u><i>Casuarina</i></u>	✓		☐
Accepted Name	<u><i>Casuarina glauca</i></u>	GRAY SHEOAK; SUCKERING AUSTRALIAN-PINE	CASUARINACEAE	<u><i>Casuarina</i></u>	✓		☐
Accepted Name	<u><i>Catharanthus roseus</i></u>	MADAGASCAR PERIWINKLE	APOCYNACEAE	<u><i>Catharanthus</i></u>	✓		☐
Accepted Name	<u><i>Celtis laevigata</i></u>	SUGARBERRY; HACKBERRY	CANNABACEAE	<u><i>Celtis</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus ciliaris</i></u>	BUFFELGRASS	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus echinatus</i></u>	SOUTHERN SANDBUR	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus gracillimus</i></u>	SLENDER SANDBUR	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus polystachios</i></u>	WEST INDIAN PENNISETUM; MISSONGRASS	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus purpureus</i></u>	ELEPHANTGRASS; NAPIERGRASS	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus setaceus</i></u>	FOUNTAINGRASS	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus spinifex</i></u>	COASTAL SANDBUR	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Cenchrus tribuloides</i></u>	SANDDUNE SANDBUR	POACEAE	<u><i>Cenchrus</i></u>	✓		☐
Accepted Name	<u><i>Centella asiatica</i></u>	SPADELEAF	APIACEAE	<u><i>Centella</i></u>	✓		☐
Accepted Name	<u><i>Centrosema virginianum</i></u>	SPURRED BUTTERFLY PEA	FABACEAE	<u><i>Centrosema</i></u>	✓		☐

NEW BUSINESS #2

Accepted Name	<u><i>Cephalanthus occidentalis</i></u>	COMMON BUTTONBUSH	<u>RUBIACEAE</u>	<u><i>Cephalanthus</i></u>	✓		☐
Accepted Name	<u><i>Ceratiola ericoides</i></u>	FLORIDA ROSEMARY; SAND HEATH	<u>ERICACEAE</u>	<u><i>Ceratiola</i></u>	✓		☐
Accepted Name	<u><i>Ceratophyllum demersum</i></u>	COONTAIL	<u>CERATOPHYLLACEAE</u>	<u><i>Ceratophyllum</i></u>	✓		☐
Accepted Name	<u><i>Ceratopteris thalictroides</i></u>	WATERSPRITE	<u>PTERIDACEAE</u>	<u><i>Ceratopteris</i></u>	✓		☐
Accepted Name	<u><i>Cestrum diurnum</i></u>	DAYFLOWERING JESSAMINE	<u>SOLANACEAE</u>	<u><i>Cestrum</i></u>	✓		☐
Accepted Name	<u><i>Chamaecrista fasciculata</i></u>	PARTRIDGE PEA	<u>FABACEAE</u>	<u><i>Chamaecrista</i></u>	✓		☐
Accepted Name	<u><i>Chamaecrista nictitans</i> var. <i>aspera</i></u>	SENSITIVE PEA	<u>FABACEAE</u>	<u><i>Chamaecrista</i></u>	✓		☐
Accepted Name	<u><i>Chamaecrista pilosa</i></u>	HAIRY SENSITIVE PEA	<u>FABACEAE</u>	<u><i>Chamaecrista</i></u>	✓		☐
Accepted Name	<u><i>Chapmannia floridana</i></u>	FLORIDA ALICIA	<u>FABACEAE</u>	<u><i>Chapmannia</i></u>	✓		☐
Accepted Name	<u><i>Chaptalia tomentosa</i></u>	WOOLLY SUNBONNETS; PINELAND DAISY	<u>ASTERACEAE</u>	<u><i>Chaptalia</i></u>	✓		☐
Accepted Name	<u><i>Cheilolejeunea clausa</i></u>		<u>LEJEUNEACEAE</u>	<u><i>Cheilolejeunea</i></u>			☐
Accepted Name	<u><i>Chenopodiastrum murale</i></u>	NETTLELEAF GOOSEFOOT	<u>AMARANTHACEAE</u>	<u><i>Chenopodiastrum</i></u>	✓		☐
Accepted Name	<u><i>Chenopodium album</i></u>	LAMB'S-QUARTERS	<u>AMARANTHACEAE</u>	<u><i>Chenopodium</i></u>	✓		☐
Accepted Name	<u><i>Chiococca alba</i></u>	SNOWBERRY; MILKBERRY	<u>RUBIACEAE</u>	<u><i>Chiococca</i></u>	✓		☐
Accepted Name	<u><i>Chromolaena odorata</i></u>	JACK-IN-THE-BUSH	<u>ASTERACEAE</u>	<u><i>Chromolaena</i></u>	✓		☐
Accepted Name	<u><i>Chrysobalanus icaco</i></u>	COCO PLUM	<u>CHRYSOBALANACEAE</u>	<u><i>Chrysobalanus</i></u>	✓		☐
Accepted Name	<u><i>Chrysophyllum oliviforme</i></u>	SATINLEAF	<u>SAPOTACEAE</u>	<u><i>Chrysophyllum</i></u>	✓		☐
Accepted Name	<u><i>Chrysopogon pauciflorus</i></u>	FLORIDA FALSE BEARDGRASS	<u>POACEAE</u>	<u><i>Chrysopogon</i></u>	✓		☐
Accepted Name	<u><i>Chrysopsis delaneyi</i></u>	DELANEY'S GOLDENASTER	<u>ASTERACEAE</u>	<u><i>Chrysopsis</i></u>	✓		☐
Accepted Name	<u><i>Chrysopsis scabrella</i></u>	COASTALPLAIN GOLDENASTER	<u>ASTERACEAE</u>	<u><i>Chrysopsis</i></u>	✓		☐
Accepted Name	<u><i>Cicuta maculata</i></u>	SPOTTED WATER HEMLOCK	<u>APIACEAE</u>	<u><i>Cicuta</i></u>	✓		☐
Accepted Name	<u><i>Cirsium horridulum</i></u>	PURPLE THISTLE; HORRID THISTLE	<u>ASTERACEAE</u>	<u><i>Cirsium</i></u>	✓		☐
Accepted Name	<u><i>Cirsium nuttallii</i></u>	NUTTALL'S THISTLE	<u>ASTERACEAE</u>	<u><i>Cirsium</i></u>	✓		☐
Accepted Name	<u><i>Cissus verticillata</i></u>	SEASONVINE; POSSUM GRAPE	<u>VITACEAE</u>	<u><i>Cissus</i></u>	✓		☐
Accepted Name	<u><i>Citharexylum spinosum</i></u>	FLORIDA FIDDLEWOOD	<u>VERBENACEAE</u>	<u><i>Citharexylum</i></u>	✓		☐
Accepted Name	<u><i>Cladium jamaicense</i></u>	JAMAICA SWAMP SAWGRASS	<u>CYPERACEAE</u>	<u><i>Cladium</i></u>	✓		☐
Accepted Name	<u><i>Clasmatodon parvulus</i></u>		<u>BRACHYTECHACEAE</u>	<u><i>Clasmatodon</i></u>			☐
Accepted Name	<u><i>Clematis baldwinii</i></u>	PINE-HYACINTH	<u>RANUNCULACEAE</u>	<u><i>Clematis</i></u>	✓		☐
Accepted Name	<u><i>Clerodendrum bungei</i></u>	ROSE GLORYBOWER	<u>LAMIACEAE</u>	<u><i>Clerodendrum</i></u>	✓		☐
Accepted Name	<u><i>Clerodendrum chinense</i></u>	STICKBUSH	<u>LAMIACEAE</u>	<u><i>Clerodendrum</i></u>	✓		☐
Accepted Name	<u><i>Clerodendrum indicum</i></u>	TURK'S TURBAN; SKYROCKET	<u>LAMIACEAE</u>	<u><i>Clerodendrum</i></u>	✓		☐
Accepted Name	<u><i>Clerodendrum speciosissimum</i></u>	JAVANESE GLORYBOWER	<u>LAMIACEAE</u>	<u><i>Clerodendrum</i></u>	✓		☐
Accepted Name	<u><i>Clerodendrum x speciosum</i></u>	JAVA GLORY BEAN; PAGODA FLOWER	<u>LAMIACEAE</u>	<u><i>Clerodendrum</i></u>	✓		☐
Accepted Name	<u><i>Clitoria mariana</i></u>	ATLANTIC PIGEONWINGS	<u>FABACEAE</u>	<u><i>Clitoria</i></u>	✓		☐
Accepted Name	<u><i>Cnidoscolus stimulosus</i></u>	TREAD-SOFTLY; FINGER-ROT	<u>EUPHORBIACEAE</u>	<u><i>Cnidoscolus</i></u>	✓		☐
Accepted Name	<u><i>Coccoloba uvifera</i></u>	SEAGRAPE	<u>POLYGONACEAE</u>	<u><i>Coccoloba</i></u>	✓		☐
Accepted Name	<u><i>Coccoloba x hybrida</i></u>		<u>POLYGONACEAE</u>	<u><i>Coccoloba</i></u>	✓		☐
Accepted Name	<u><i>Coccothrinax argentata</i></u>	FLORIDA SILVER PALM	<u>ARECACEAE</u>	<u><i>Coccothrinax</i></u>	✓		☐
Accepted Name	<u><i>Coelorachis rugosa</i></u>	WRINKLED JOINTTAILGRASS	<u>POACEAE</u>	<u><i>Coelorachis</i></u>	✓		☐
Accepted Name	<u><i>Coleataenia abscissa</i></u>	CUTTHROATGRASS	<u>POACEAE</u>	<u><i>Coleataenia</i></u>	✓		☐
Accepted Name	<u><i>Coleataenia rigidula</i></u>	REDTOP PANICUM	<u>POACEAE</u>	<u><i>Coleataenia</i></u>	✓		☐
Accepted Name	<u><i>Coleataenia tenera</i></u>	BLUEJOINT PANICUM	<u>POACEAE</u>	<u><i>Coleataenia</i></u>	✓		☐
Accepted Name	<u><i>Colocasia esculenta</i></u>	WILD TARO; DASHEEN; COCO YAM	<u>ARACEAE</u>	<u><i>Colocasia</i></u>	✓		☐
Accepted Name	<u><i>Cololejeunea minutissima</i> subsp. <i>minutissima</i></u>		<u>LEJEUNEACEAE</u>	<u><i>Cololejeunea</i></u>			☐
Accepted Name	<u><i>Commelina benghalensis</i></u>	JIO	<u>COMMELINACEAE</u>	<u><i>Commelina</i></u>	✓		☐

NEW BUSINESS #2

Accepted Name	<u><i>Commelina diffusa</i> var. <i>diffusa</i></u>	COMMON DAYFLOWER	COMMELINACEAE	<i>Commelina</i>	✓		☐
Accepted Name	<u><i>Commelina diffusa</i> var. <i>gigas</i></u>	CLIMBING DAYFLOWER	COMMELINACEAE	<i>Commelina</i>	✓		☐
Accepted Name	<u><i>Commelina erecta</i></u>	WHITEMOUTH DAYFLOWER	COMMELINACEAE	<i>Commelina</i>	✓		☐
Accepted Name	<u><i>Commelina gambiae</i></u>	GAMBIAN DAYFLOWER	COMMELINACEAE	<i>Commelina</i>	✓		☐
Accepted Name	<u><i>Condea verticillata</i></u>	JOHN CHARLES	LAMIACEAE	<i>Condea</i>	✓		☐
Accepted Name	<u><i>Conoclinium coelestinum</i></u>	BLUE MISTFLOWER	ASTERACEAE	<i>Conoclinium</i>	✓		☐
Accepted Name	<u><i>Conradina grandiflora</i></u>	LARGEFLOWER FALSE ROSEMARY	LAMIACEAE	<i>Conradina</i>	✓		☐
Accepted Name	<u><i>Conyza canadensis</i></u>	CANADIAN HORSEWEED	ASTERACEAE	<i>Conyza</i>	✓		☐
Accepted Name	<u><i>Corchorus aestuans</i></u>	JUTE	MALVACEAE	<i>Corchorus</i>	✓		☐
Accepted Name	<u><i>Cordia dichotoma</i></u>	FRAGRANT MANJACK	BORAGINACEAE	<i>Cordia</i>	✓		☐
Accepted Name	<u><i>Coreopsis floridana</i></u>	FLORIDA TICKSEED	ASTERACEAE	<i>Coreopsis</i>	✓		☐
Accepted Name	<u><i>Coreopsis leavenworthii</i></u>	LEAVENWORTH'S TICKSEED	ASTERACEAE	<i>Coreopsis</i>	✓		☐
Accepted Name	<u><i>Cornus foemina</i></u>	SWAMP DOGWOOD; STIFF DOGWOOD	CORNACEAE	<i>Cornus</i>	✓		☐
Accepted Name	<u><i>Corymbia torelliana</i></u>	TORELL'S EUCALYPTUS; CADAGA	MYRTACEAE	<i>Corymbia</i>	✓		☐
Accepted Name	<u><i>Crassocephalum crepidioides</i></u>	REDFLOWER RAGLEAF	ASTERACEAE	<i>Crassocephalum</i>	✓		☐
Accepted Name	<u><i>Crinum americanum</i></u>	SEVEN-SISTERS; STRING-LILY	AMARYLLIDACEAE	<i>Crinum</i>	✓		☐
Accepted Name	<u><i>Crocanthemum corymbosum</i></u>	PINEBARREN FROSTWEED	CISTACEAE	<i>Crocanthemum</i>	✓		☐
Accepted Name	<u><i>Crocanthemum nashii</i></u>	FLORIDA SCRUB FROSTWEED	CISTACEAE	<i>Crocanthemum</i>	✓		☐
Accepted Name	<u><i>Crotalaria incana</i></u>	SHAKESHAK	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria lanceolata</i></u>	LANCELEAF RATTLEBOX	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria pallida</i> var. <i>obovata</i></u>	SMOOTH RATTLEBOX	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria pumila</i></u>	LOW RATTLEBOX	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria retusa</i></u>	RATTLEWEED	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria rotundifolia</i></u>	RABBITBELLS	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Crotalaria spectabilis</i></u>	SHOWY RATTLEBOX	FABACEAE	<i>Crotalaria</i>	✓		☐
Accepted Name	<u><i>Croton glandulosus</i> var. <i>floridanus</i></u>	VENTE CONMIGO	EUPHORBIACEAE	<i>Croton</i>	✓		☐
Accepted Name	<u><i>Croton glandulosus</i> var. <i>septentrionalis</i></u>	VENTE CONMIGO	EUPHORBIACEAE	<i>Croton</i>	✓		☐
Accepted Name	<u><i>Croton linearis</i></u>	PINELAND CROTON; GRANNYBUSH	EUPHORBIACEAE	<i>Croton</i>	✓		☐
Accepted Name	<u><i>Croton michauxii</i></u>	RUSHFOIL; MICHAUX'S CROTON	EUPHORBIACEAE	<i>Croton</i>	✓		☐
Accepted Name	<u><i>Croton punctatus</i></u>	GULF CROTON; BEACH TEA	EUPHORBIACEAE	<i>Croton</i>	✓		☐
Accepted Name	<u><i>Ctenitis submarginalis</i></u>	BROWN-HAIR COMB FERN	DRYOPTERIDACEAE	<i>Ctenitis</i>	✓		☐
Accepted Name	<u><i>Ctenium aromaticum</i></u>	TOOTHACHEGRASS	POACEAE	<i>Ctenium</i>	✓		☐
Accepted Name	<u><i>Cucumis melo</i></u>	CANTALOUPE	CUCURBITACEAE	<i>Cucumis</i>	✓		☐
Accepted Name	<u><i>Cucurbita okeechobeensis</i></u>	OKEECHOBEE GOURD	CUCURBITACEAE	<i>Cucurbita</i>	✓		☐
Accepted Name	<u><i>Cupaniopsis anacardioides</i></u>	CARROTWOOD	SAPINDACEAE	<i>Cupaniopsis</i>	✓		☐
Accepted Name	<u><i>Cuphea carthagenensis</i></u>	COLOMBIAN WAXWEED	LYTHRACEAE	<i>Cuphea</i>	✓		☐
Accepted Name	<u><i>Cuphea strigulosa</i></u>	STIFFHAIR WAXWEED	LYTHRACEAE	<i>Cuphea</i>	✓		☐
Accepted Name	<u><i>Cuscuta exaltata</i></u>	TALL DODDER	CONVOLVULACEAE	<i>Cuscuta</i>	✓		☐
Accepted Name	<u><i>Cuscuta pentagona</i></u>	FIVEANGLED DODDER	CONVOLVULACEAE	<i>Cuscuta</i>	✓		☐
Accepted Name	<u><i>Cuscuta umbellata</i></u>	FLATGLOBE DODDER	CONVOLVULACEAE	<i>Cuscuta</i>	✓		☐

Search results returned in 0.4 seconds

Compare Record

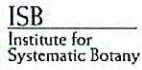
For more information, contact: [Richard Wunderlin](#) or [Bruce Hansen](#), or [Alan Franck](#)

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IRC's Book

"Rare Plants of South Florida : Their History,
Conservation, and Restoration"



Ecological Restoration Standards

Read about cutting-edge international
standards for ecological restoration

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CURRENT NEWS

IRC Hiring New Crew Member

Monday, June 21st, 2021

IRC is currently accepting applications for team member (field technician) positions for 2021 for our Pine Rockland Initiative program. Our restoration projects will be in Miami-Dade County working on restoring the pine rockland fragments through invasive plant treatment, native hardwood reduction, rare plant monitoring, seed collecting, and other restoration activities.

Responsibilities include using hand tools and mechanical tools, such as chainsaws and brush cutters, and applying herbicide. Some knowledge of south Florida plants (native and non-native) is preferred but not required (must have the ability to learn in the field). Must be okay working in the south Florida climate (hot and humid). Must be able to lift 50 lbs. Full-time, starting pay rate is \$10.50/hour, and must have reliable transportation. Our field office is located in Goulds, FL (south Miami-Dade County). Email Cara Abbott your resume and cover letter at abbott@regionalconservation.org.



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CALENDAR

Events from Jun 23rd

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Online Resources

Floristic Inventory of the Florida Keys

Floristic Inventory of South Florida

Natives for Your Neighborhood

Plantas de Puerto Rico / Plants of Puerto Rico

Plantas del Mayab (Yucatan)

More Resources

Media Placements

Rare Plants of Everglades National Park (Report)

Rare Plants of South Florida (Book)

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100 East Linton Boulevard, Suite 302B
Delray Beach, Florida 33483 USA

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Natives For Your Neighborhood Plant List

Plants in Zip Code 33480

Below is a list of the cultivated native plants for this zip code. These plants, all within their natural ranges in this geographic area, are appropriate for use in landscaping here. By planting these native species, you will not only create a low-maintenance landscape to enjoy, but you will also contribute to the conservation and restoration of South Florida's environment. (For more on this, [click here.](#))

To take gardening with natives a step further, you can learn about the native plant habitats that are appropriate for your area (click the back button to view a list of those habitats). You can then choose a habitat, and view a list of plants for that specific habitat. This way, you can try your hand at restoring a native plant habitat in your yard or project site. Habitat lists also include some hard to grow natives and natives with narrow habitat requirements, such as strictly coastal species, that may not be included on your main zip code list.

To view detailed information on the horticultural requirements and landscaping uses of the plants as well as photos for most species, click on any plant name.

Do Not Group By Plant Form: ☐

Sort By:

Scientific Name

Common Name

PRINTER FRIENDLY VERSION

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Major Sponsor:



Emergent Sponsors:



- Widely cultivated
 ▲ Cultivated at native plant nurseries

Common Name

Scientific Name

Trees

**Black ironwood** ■**Krugiodendron ferreum****Black mangrove** ▲**Avicennia germinans****Blolly, Beeftree** ■**Guapira discolor****Buttonwood** ■**Conocarpus erectus****Cabbage palm** ■**Sabal palmetto****Coastal Plain willow** ▲**Salix caroliniana****Common torchwood, Sea torchwood** ▲**Amyris elemifera****Dahoon holly, Dahoon** ■**Ilex cassine****Florida fiddlewood** ▲**Citharexylum spinosum****Gumbo-limbo** ■**Bursera simaruba****Hercules'-club** ▲**Zanthoxylum clava-herculis**

Canopy Sponsors:



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Herbaceous Sponsors:
Florida Native Plant Nursery



Inkwood, Butterbough ▲

Exothea paniculata



Jamaica caper-tree ■

Quadrella cynophallophora



Lancewood ▲

Nectandra coriacea



Paradisetree ■

Simarouba glauca



Persimmon, Common persimmon ▲

Diospyros virginiana



Pigeonplum, Tietongue ■

Coccoloba diversifolia



Pond-apple ■

Annona glabra



Red bay ▲

Persea borbonia var. borbonia



Red mangrove ▲

Rhizophora mangle



Red mulberry ▲

Morus rubra



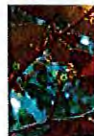
Saffronplum ▲

Sideroxylon celastrinum



Satinleaf ■

Chrysophyllum oliviforme



Seagrape ■

Coccoloba uvifera



Spanish stopper, Boxleaf stopper ■

Eugenia foetida



Strangler fig, Golden fig ■

Ficus aurea



Sugarberry, Southern Hackberry ▲

Celtis laevigata



Twinberry, Simpson's stopper ■

Myrcianthes fragrans



Virginia live oak ■

Quercus virginiana



White mangrove ▲

Laguncularia racemosa



White stopper ■

Eugenia axillaris



Wild mastic, False mastic ▲

Sideroxylon foetidissimum



Wild-lime, Lime prickly-ash ▲

Zanthoxylum fagara



Willow-bustic, White bully ▲

Sideroxylon salicifolium

Shrubs and Woody Groundcovers



American beautyberry ■

Callicarpa americana

Bahama nightshade

Solanum bahamense



Barbwire cactus, Dilldoe cactus ▲

Acanthocereus tetragonus



Baycedar ▲

Suriana maritima



Beach-creeper, Golden-creeper, Coughbush ▲

Ernodea littoralis



Beach-elder, Seacoast marshelder ▲

Iva imbricata



Christmasberry, Carolina desertthorn ▲

Lycium carolinianum



Coco-plum ■

Chrysobalanus icaco



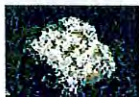
Common snowberry, Milkberry ▲

Chiococca alba



Coralbean, Cherokee bean ■

Erythrina herbacea



Elderberry, American elder ▲

Sambucus nigra subsp. canadensis



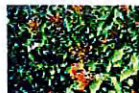
Erect pricklypear ▲

Opuntia stricta



False-sisal ▲

Agave decipiens



Firebush ■

Hamelia patens var. patens



Florida Keys blackbead ▲

Pithecellobium keyense



**Florida privet, Florida
swampprivet** ■

Forestiera segregata



Gopher-apple ▲

Licania michauxii



**Inkberry, Beachberry,
Gullfeed** ▲

Scaevola plumieri



**Limber caper, Bayleaf
capertree** ▲

Cynophalla flexuosa



Marlberry ▲

Ardisia escallonioides



Myrsine, Colicwood ■

Myrsine cubana



**Narrowleaved groundsel,
Saltwater Falsewillow** ▲

Baccharis angustifolia



**Pineland croton,
Grannybush** ▲

Croton linearis



Pricklypear ▲

Opuntia humifusa



**Saltbush, Groundsel tree,
Sea-myrtle** ▲

Baccharis halimifolia



Saltwort, Turtleweed

Batis maritima



Saw palmetto ■

Serenoa repens



**Sea-lavender, Sea-
rosemary** ▲

Tournefortia gnaphalodes

Shiny-leaved wild coffee ■

Psychotria nervosa



Shortleaf wild coffee ▲

Psychotria tenuifolia



Silver sea-oxeye-daisy,
Bushy seaside oxeye ■

Borrichia frutescens



Silverling

Baccharis glomeruliflora



Spanish-bayonet, Aloe
yucca ▲

Yucca aloifolia



St. Andrew's-cross

Hypericum hypericoides



Tough Florida bully ▲

Sideroxylon tenax



Varnishleaf, Florida
hopbush ▲

Dodonaea viscosa var.
viscosa



Wax myrtle, Southern
Bayberry ■

Myrica cerifera



White indigoberry ■

Randia aculeata



Wild-sage, Buttonsage ▲

Lantana involucrata



Yellow necklacepod ▲

Sophora tomentosa var.
truncata

Herbs

Beachgrass, Bitter
panicgrass, Bitter panicum

Panicum amarum



American bluehearts

Buchnera americana



Arrowfeather threeawn ▲

Aristida purpurascens



Ball-moss

Tillandsia recurvata



Banded wild-pine, Twisted
airplant

Tillandsia flexuosa



Beach ragweed, Coastal
ragweed ▲

Ambrosia hispida



Beach verbena, Coastal
mock vervain ▲

Glandularia maritima



Beach-tea, Gulf croton

Croton punctatus



Bird pepper, Cayenne
pepper ▲

Capsicum annuum var.
glabriusculum



Bulltongue arrowhead,
lance-leaved arrowhead ▲

Sagittaria lancifolia



Camphorweed

Heterotheca subaxillaris



Candyweed, Showy
milkwort

Polygala violacea



Coontie, Florida arrowroot

Zamia integrifolia



East Coast dune sunflower ■

Helianthus debilis subsp.





debilis



Eastern gamagrass,
Fakahatchee grass ■

Tripsacum dactyloides



Elliott's love grass ▲

Eragrostis elliottii



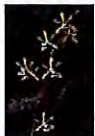
False nettle, Bog hemp,
Button-hemp ▲

Boehmeria cylindrica



False-mint, Sixangle
foldwing ▲

Dicliptera sexangularis



Florida butterfly orchid

Encyclia tampensis



Florida vente conmigo ▲

Croton glandulosus var.
floridanus



Forked bluecurls ▲

Trichostema dichotomum



Frostweed, White
crownbeard ▲

Verbesina virginica



Giant leather fern ■

Acrostichum danaeifolium



Giant wild-pine, Giant
airplant

Tillandsia utriculata



Golden leather fern

Acrostichum aureum



Golden polypody ▲

Phlebodium aureum

Gulf Coast spikerush

Eleocharis cellulosa



Low rattlebox

Crotalaria pumila



Mangrove spiderlily,
Perfumed spiderlily ■

Hymenocallis latifolia



Marshhay cordgrass,
Saltmeadow cordgrass ■

Spartina patens



Mild water-pepper, Swamp
smartweed ▲

Polygonum hydropiperoides



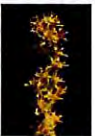
Muhlygrass, Hairawn muhly
■

Muhlenbergia capillaris



Narrowleaf yellowtops ▲

Flaveria linearis



Narrow-leaved goldenrod,
Wand goldenrod ▲

Solidago stricta



Partridge pea ▲

Chamaecrista fasciculata



Perennial sea-purslane,
Shoreline seapurslane ▲

Sesuvium portulacastrum



Pineland heliotrope

Heliotropium polyphyllum



Pink purslane, Kiss-me-
quick ▲

Portulaca pilosa

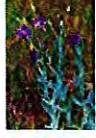


Purple thistle ▲

Cirsium horridulum

Rabbitbells

Crotalaria rotundifolia



Reflexed wild-pine,
Northern needleleaf

Resurrection fern

Rose-of-Plymouth

Rosy camphorweed ▲

Saltgrass ▲

Saw-grass, Jamaica swamp
sawgrass ▲

Scorpionstail ▲

Sea-oats ■

Seashore dropseed ▲

Seashore paspalum ▲

Seaside gentian,
Marshgentian

Seaside goldenrod ▲

Tillandsia balbisiana

Pleopeltis polypodioides
var. michauxiana

Sabatia stellaris

Pluchea baccharis

Distichlis spicata

Cladium jamaicense

Heliotropium
angiospermum

Uniola paniculata

Sporobolus virginicus

Paspalum vaginatum

Eustoma exaltatum

Solidago sempervirens



**Seaside heliotrope, Salt
heliotrope** ▲

Heliotropium curassavicum



Southern shield fern ▲

Thelypteris kunthii



**Southern-fleabane, Oakleaf
fleabane**

Erigeron quercifolius



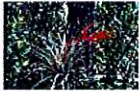
Spanish-moss

Tillandsia usneoides



Starrush whitetop ▲

Rhynchospora colorata



**Stiff-leaved wild-pine,
Cardinal airplant**

**Tillandsia fasciculata var.
densispica**



**Swamp fern, Toothed
midsorus fern** ▲

Blechnum serrulatum



Sweetscent

Pluchea odorata



Switchgrass ▲

Panicum virgatum



**Tea-blinkum, Sanddune
cinchweed** ▲

Pectis glaucescens



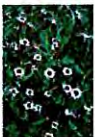
**Thin-leaved wild-pine,
Southern needleleaf**

Tillandsia setacea



Tropical-puff ▲

Neptunia pubescens



**Turkey tangle fogfruit,
Capeweed, Frogfruit** ▲

Phyla nodiflora

Twisted wild-pine, Potbelly

Tillandsia paucifolia



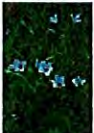
airplant



Virginia saltmarsh mallow ▲ **Kosteletzkya pentacarpos**



Walter's groundcherry ▲ **Physalis walteri**



Water hyssop, Herb-of-grace ▲ **Bacopa monnieri**



Whitemouth dayflower **Commelina erecta**



Woodsgrass, Basketgrass ▲ **Oplismenus hirtellus subsp. setarius**



Yellow joyweed **Alternanthera flavescens**

Vines and Climbers



Beach morningglory ▲ **Ipomoea imperati**



Beach-bean, Baybean, Seaside jackbean ▲ **Canavalia rosea**



Climbing hempweed, Climbing hempvine ▲ **Mikania scandens**



Corkystem passionflower ▲ **Passiflora suberosa**



Devil's-potato, Rubbervine **Echites umbellatus**



Everglades morningglory ▲

Ipomoea sagittata



Marinevine, Sorrelvine

Cissus trifoliata



Mouse's pineapple, Redgal, Yellowroot ▲

Morinda royoc



Muscadine, Muscadine grape ▲

Vitis rotundifolia



Railroad vine, Bayhops ■

Ipomoea pes-caprae subsp. brasiliensis



Spurred butterfly-pea

Centrosema virginianum



Vine milkweed, Gulf Coast swallowwort

Seutera angustifolia



Virginia-creeper, Woodbine ▲

Parthenocissus quinquefolia



Wild-allamanda, Hammock viperstail ▲

Pentalinon luteum

Resources Links:

Florida Wildflower Foundation **Find your Native Plant Society Chapter**

Plant Real Florida **FNAI Field Guide**

Florida Invasive Plant Species Mobile Field Guide (FLIP)

Water Wise Landscaping **Florida Friendly Landscaping**

Wildlife Habitat Certification

Online Resources

Floristic Inventory of the Florida Keys

Floristic Inventory of South Florida

Natives for Your Neighborhood

Plantas de Puerto Rico / Plants of Puerto Rico

Plantas del Mayab (Yucatan)

More Resources

Media Placements

Rare Plants of Everglades National Park (Report)

Rare Plants of South Florida (Book)

Get In Touch

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Er

Message

Send Message



The Institute for Regional Conservation
100 East Linton Boulevard, Suite 302B
Delray Beach, Florida 33483 USA

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Florida Native Plant Society

**Preserving, Conserving and Restoring the Native Plants and Native Plant
Communities of Florida**

[JOIN US!](#)

[DONATE](#)

What We Do and How We Do It

NEW BUSINESS #2



Preservation

We work to preserve Florida's remaining natural lands through acquisition and proper management.

[MORE INFO](#)



Conservation

We work to protect Florida's rare plants. We conduct rare plant surveys and conduct plant rescues.

[MORE INFO](#)



Restoration

We help in the management of public and private lands to improve habitats for wildlife and the plants they depend on.

[MORE INFO](#)



Research

We support research needed to better understand the genetics and management needs of native Plants.

[MORE INFO](#)



Policy

We work with leaders to better preserve our natural heritage which is critical to Florida's tourism base.

[MORE INFO](#)



Education

We provide native plant information to members, land managers, homeowners, and landscape professionals.

[MORE INFO](#)



Landscaping

We provide information on the creation and management of environmentally sustainable landscapes

[MORE INFO](#)



Citizen Science

Our well trained members participate in plant surveys, reproductive studies, phenology research, etc.

[MORE INFO](#)



Native Plants for your area



ATTRACTING BUTTERFLIES



ATTRACTING WILDLIFE



FIND A SPECIFIC PLANT



FIND PLANTS BASED ON RANGE AND HABITAT NEEDS (OR REFINES YOUR LAST SEARCH)



Browse Plants

663 plants

✂ will show often used synonyms and for groups of species, species in the group.

♥ indicates favorites that are easy to acquire and grow

A

[*Acer negundo*](#) Box-elder, Ash-leaf Maple

[*Acer rubrum*](#) ♥ Red Maple

[*Acer saccharinum*](#) Silver Maple

[*Acer saccharum subsp. floridanum*](#) ✂ Florida Maple

[*Achillea millefolium*](#) Common Yarrow

[*Acroelorrhaphe wrightii*](#) ♥ Paurotis Palm, Everglades Palm

[*Acrostichum danaeifolium*](#) Giant Leather Fern

[*Adiantum capillus-veneris*](#) Venus Maidenhair Fern, Southern Maidenhair

[*Aesculus pavia*](#) Red Buckeye

[*Agalinis fasciculata*](#) Beach False Foxglove

[*Agarista populifolia*](#) Florida Hobblebush, Pipewood, Agarista

[*Agave decipiens*](#) False Sisal

[*Ageratum maritimum*](#) ✂ Seaside Ageratum, Cape Sable Whiteweed

[*Aletris lutea*](#) Yellow Colic-root

[*Allium canadense*](#) Wild Onion, Meadow Garlic

[*Alnus serrulata*](#) Hazel Alder, Smooth Alder

[*Alvaradoa amorphoides*](#) Mexican Alvaradoa

[*Ambrosia hispida*](#) ♥ Coastal Ragweed, Bay Geranium

[*Amelanchier arborea*](#) ♥ Serviceberry, Shadbush, Juneberry

[*Amorpha fruticosa*](#) ♥ False Indigo-bush, Bastard-indigo

[*Amorpha herbacea*](#) Cluster-spike Indigo-bush

[*Amsonia ciliata*](#) Slimpod, Fringed Bluestar, Blue Dogbane

[*Amsonia tabernaemontana*](#) Eastern Bluestar, Blue Dogbane

[*Amyris elemifera*](#) Torchwood, Sea Torchwood

[*Andropogon gerardii*](#) Big Bluestem

[*Andropogon glomeratus*](#) Bushy Bluestem

[*Andropogon virginicus*](#) Broomsedge Bluestem

Angadenia berteroi ♡ Pineland Allamanda, Pineland Golden Trumpet
Annona glabra ♡ Pond-apple, Custard-apple
Aquilegia canadensis Columbine, Eastern Red Columbine
Aralia spinosa Devil's Walkingstick
Ardisia escallonioides ♡ Marberry, Marbleberry
Argemone albiflora White Prickly-poppy, Bluestem Prickly-poppy
Argemone mexicana Yellow Prickly-poppy
Arisaema dracontium Green Dragon, Dragonroot
Arisaema triphyllum Jack-in-the-pulpit
Aristida stricta ♡ Wiregrass
Aristolochia tomentosa Woolly Dutchman's-pipe; Pipevine
Aronia arbutifolia ♡ Red Chokeberry
Asclepias humistrata Sandhill Milkweed, Pinewoods Milkweed
Asclepias incarnata Rose Or Swamp Milkweed
Asclepias lanceolata Red Milkweed, Few-flower Milkweed
Asclepias perennis ♡ Aquatic Milkweed, Swamp Milkweed
Asclepias tuberosa ♡ Butterflyweed, Orange Milkweed
Asclepias verticillata Whorl-leaf Milkweed, Whorled Milkweed.
Asimina incana Polecat Bush, Flag Pawpaw, Woolly Pawpaw
Asimina obovata ♡ Flag Pawpaw, Bigflower Pawpaw, Scrub Pawpaw
Asimina parviflora Smallflower Pawpaw
Asimina pygmaea ♡ Dwarf Pawpaw, Gopherberry
Asimina reticulata Dog-banana, Netted Pawpaw
Asimina triloba Common Pawpaw, Dog-banana, Indian-banana
Asplenium spp. ♡ Spleenwort
Athyrium filix-femina Southern Lady Fern
Avicennia germinans Black Mangrove

B

Baccharis dioica Broombush Falsewillow
Baccharis halimifolia ♡ Groundsel Tree, Sea Myrtle, Salt Bush
Bacopa caroliniana Blue Waterhyssop, Lemon Hyssop
Bacopa monnieri Water Hyssop, Herb-of-grace
Balduina angustifolia Coastalplain Honeycombhead, Yellow Buttons
Baptisia alba White Wild Indigo
Batis maritima Saltwort, Turtleweed
Bejaria racemosa ♡ Tarflower, Flyweed
Berlandiera subcaulis ♡ Common Greeneyes, Florida Greeneyes
Betula nigra ♡ River Birch
Bidens alba Beggarticks
Bidens laevis Burmarigold, Smooth Beggarticks
Bidens mitis Smallfruit Beggarticks
Bignonia capreolata ♡ Crossvine
Bletia purpurea Pinepink
Boehmeria cylindrica Small-spike False-nettle, Bog Hemp
Boltonia asteroides Marsh Boltonia, White Doll's Daisy
Borrchia arborescens Shrubby Sea Ox-eye Daisy
Borrchia frutescens Sea-oxeye Daisy
Botrychium biternatum ♡ Southern Grape-fern
Bouyeria cassiniifolia Little Strongbark
Bouyeria succulenta Strongbark
Brickellia cordifolia Fly's Nemesis; Heart-leaf Brickellbush
Bursera simaruba ♡ Gumbo-limbo
Byrsonima lucida Locustberry, Long Key Locustberry

C

Cakile lanceolata Coastal Searocket
Calamintha ashei Ashe's Savory, Ashe's Calamint
Calamintha coccinea ♡ Scarlet Savory, Scarlet Calamint, Red Basil
Calamintha dentata Toothed Savory
Calamintha georgiana Savory, Georgia Calamint
Callicarpa americana ♡ American Beautyberry

Callirhoe papaver Woodland Poppymallow
Callisia spp. ♡ Roseling, Spiderwort
Calycanthus floridus ♡ Carolina Allspice, Sweetshrub
Calydorea caelestina Bartram's Ixia
Campsis radicans Trumpet-vine, Trumpet Creeper
Campyloneurum phyllitidis Long Strap Fern
Canavalia rosea Seaside Jackbean, Baybean, Beach-bean
Canella winterana ♥ Cinnamon Bark, Wild Cinnamon, Pepper Cinnamon
Canna flaccida ♥ Golden Canna, Bandana-of-the-Everglades
Capsicum annuum var. glabriusculum Bird Pepper
Cardiospermum corindum Balloonvine, Heartseed, Faux Persil
Carphephorus carnosus Bald-headed Carphephorus, Pineland Chaffhead
Carphephorus corymbosus Coastal-plain Chaffhead
Carphephorus odoratissimus Vanilla-plant, Deer's Tongue, Florida Paintbrush
Carphephorus paniculatus Deer Tongue, Hairy Trilisa
Carphephorus pseudoliatris Bristle-leaf Chaffhead
Carpinus caroliniana Musclemwood, Hornbeam, Blue-beech
Cartrema americanum ♡ Wild Olive, American Devilwood
Cartrema floridanum ♡ Scrub Wild Olive
Carya aquatica Water Hickory
Carya floridana Scrub Hickory
Carya glabra Pignut Hickory
Carya pallida Sand Hickory
Carya tomentosa ♡ Mockernut Hickory
Casasia clusiifolia ♡ Seven-year-apple
Castanea pumila Ashe's Chinquapin, Trailing Chinquapin
Catalpa bignonioides ♥ Catalpa
Celtis laevigata ♥ Hackberry, Sugarberry
Celtis occidentalis Hackberry
Centrosema virginianum Spurred Butterfly Pea
Cephalanthus occidentalis ♥ Buttonbush
Cercis canadensis ♥ Eastern Redbud
Chamaecrista fasciculata Sleeping Plant, Partridge-pea
Chamaecyparis thyoides Atlantic White Cedar
Chasmanthium latifolium Indian Woodoats, Spikegrass
Chiococca alba Snowberry
Chionanthus pygmaeus Pigmy Fringe Tree
Chionanthus virginicus ♥ White Fringe Tree
Chrysobalanus icaco ♥ Coco Plum, Cocoplum
Chrysophyllum oliviforme Satinleaf
Chrysopsis floridana Florida Goldenaster
Chrysopsis gossypina Hairy Goldenaster
Chrysopsis mariana Maryland Goldenaster
Cirsium horridulum Purple Thistle, Yellow Thistle
Citharexylum spinosum ♥ Fiddlewood
Cladium jamaicense Saw-grass
Clematis baldwinii Pine-hyacinth
Clematis crispa Swamp Leather Flower
Clematis reticulata Netleaf Virgin's-bower
Clematis virginiana Virginia Virgin's-bower
Clethra alnifolia Sweet Pepperbush
Cliftonia monophylla Black Titi, Spring Titi, Buckwheat-tree
Clinopodium brownei ♡ Browne's Savory
Clusia rosea Pitch-apple, Autograph Tree
Cnidioscolus stimulosus Tread-Softly; Finger-rot
Coccoloba diversifolia Pigeon Plum
Coccoloba uvifera ♥ Seagrape
Coccothrinax argentata Florida Silver Palm
Colubrina arborescens Greenheart
Colubrina elliptica Soldierwood
Conocarpus erectus ♥ Buttonwood
Conoclinium coelestinum Mistflower, Blue Mistflower

Conradina brevifolia Short-leaved Conradina
Conradina canescens False-rosemary
Conradina etonia Etonia Conradina, Etonia False Rosemary
Conradina glabra Apalachicola Conradina
Conradina grandiflora Large-flowered Conradina, Largeflower False-rosemary
Consolea corallicola ♡ Semaphore Pricklypear, Semaphore Cactus
Coreopsis floridana Florida Tickseed
Coreopsis gladiata Southeastern Tickseed
Coreopsis grandiflora Large-flowered Coreopsis
Coreopsis lanceolata Lance-leaved Tickseed
Coreopsis leavenworthii ♥ Leavenworth's Tickseed
Coreopsis linifolia Texas Tickseed
Coreopsis major Tickseed, Greater Tickseed
Coreopsis nudata Swamp Tickseed, Georgia Tickseed
Coreopsis tripteris Tall Tickseed
Cornus alternifolia Alternate-leaved Dogwood, Pagoda Dogwood
Cornus amomum Silky Dogwood, Silky Cornel
Cornus asperifolia Rough-leaf Cornel
Cornus florida ♥ Flowering Dogwood
Cornus foemina Swamp Dogwood, Stiff Cornel
Crataegus aestivalis May Haw, Apple Haw
Crataegus crus-galli Cockspur Hawthorn
Crataegus flava Yellow Haw
Crataegus marshallii Parsley Hawthorn
Crataegus michauxii Michaux's Hawthorn
Crataegus phaenopyrum Washington Hawthorn
Crinum americanum String Lily, Swamp Lily
Crocanthemum spp. ♡ Rockrose
Crossopetalum ilicifolium Quailberry, Christmasberry
Crossopetalum rhacoma Rhacoma, Maidenberry
Ctenium aromaticum Toothache Grass
Cynophalla flexuosa ♡ Limber Caper, Bay-leaved Caper, Bay-leaved Capertree
Cyrtilla racemiflora Titi, Leatherwood

D

Dalea carnea Hammock Prairie-clover, Whitetassels
Dalea feayi Prairie-clover, Scrub Prairie Clover
Dalea pinnata Summer Farewell
Damburneya coriacea ♡ Lancewood
Delphinium carolinianum Carolina Larkspur, Prairie Larkspur
Dicerandra spp. ♡ Balm
Diospyros virginiana Persimmon
Dirca palustris Leatherwood
Distichlis spicata Saltgrass
Dodonaea viscosa Varnish Leaf, Florida Hopbush
Dryopteris ludoviciana Southern Wood Fern
Drypetes diversifolia Milkbark, Whitewood
Drypetes lateriflora Guiana Plum
Dyschoriste humistrata Swamp Twinflower
Dyschoriste oblongifolia Twinflower, Oblongleaf Twinflower

E

Echinacea purpurea ♥ Eastern Purple Coneflower
Eleocharis cellulosa Gulf Coast Spikerush
Elephantopus elatus Elephant's-foot
Equisetum hyemale var. affine Scouring-rush, Horsetail
Eragrostis elliotii ♥ Elliott's Lovegrass
Eragrostis spectabilis Purple Lovegrass
Erigeron quercifolius ♡ Oakleaf Fleabane
Eriogonum tomentosum Wild Buckwheat
Erithalis fruticosa Black Torch
Ernodea littoralis ♥ Beach-creeper, Golden Creeper

Eryngium aquaticum Corn Snakeroot
Eryngium yuccifolium Button Snakeroot, Rattlenakemaster
Erythrina herbacea ♥ Coralbean, Cherokee Bean
Erythronium umbilicatum Dimpled Troutlily
Eugenia axillaris ♥ White Stopper
Eugenia confusa ♥ Ironwood, Red-berry Stopper
Eugenia foetida ♥ Spanish Stopper, Boxleaf Stopper
Eugenia rhombea ♥ Red Stopper, Spiceberry
Euonymus americanus American Strawberry-bush
Eupatorium perfoliatum Common Boneset
Euphorbia cyathophora ✂ Painted-leaf
Euphorbia heterophylla ✂ Fiddler's Spurge, Mexican Fireplant
Euploca polyphylla ✂ Pineland Heliotrope
Eustoma exaltatum Seaside Gentian
Euthamia spp. ✂ Flattop Goldenrod
Eutrochium fistulosum ✂ Joe-pye-weed, Queen-of-the-meadow
Exothea paniculata Inkwood

F

Fagus grandifolia ✂ American Beech
Ficus aurea ♥ Strangler Fig
Ficus citrifolia ♥ Wild Banyan-tree
Flaveria linearis Yellowtop
Forestiera segregata ♥ Florida Privet, Florida Swampprivet
Fothergilla milleri ✂ Dwarf Witch-alder
Frangula caroliniana ✂ Carolina Buckthorn
Fraxinus americana White Ash
Fraxinus caroliniana Pop Ash, Water Ash
Fraxinus pennsylvanica Green Ash
Funastrum clausum ✂ White Twinevine

G

Gaillardia aestivalis Smooth-headed Blanket Flower; Gaillardia
Gaillardia pulchella ♥ Blanket-flower, Gaillardia, Indian Blanket
Galactia Elliottii White Milkpea
Galactia striata Florida Hammock Milkpea
Garberia heterophylla ♥ Garberia
Gaylussacia dumosa Dwarf Huckleberry
Gaylussacia frondosa var. tomentosa Blue Huckleberry
Gaylussacia mosieri Woolly-berry
Gelsemium rankinii Odorless Jessamine
Gelsemium sempervirens ♥ Yellow Jessamine, Carolina Jasmine
Gentiana saponaria Soapwort Gentian
Geobalanus oblongifolius ✂ Gopher-apple
Glandularia maritima ✂ Beach Verbena, Coastal Mock Vervain
Glandularia tampensis ✂ Tampa Vervain
Gleditsia triacanthos Honey Locust
Gordonia lasianthus ♥ Loblolly-bay
Gossypium hirsutum Wild Cotton
Guaiaecum sanctum ♥ Lignum-vitae
Guapira discolor Blolly, Beefwood
Gymnanthes lucida Crabwood, Oysterwood

H

Habenaria quinqueseta Long-horned Rein Orchid
Halesia carolina Little Silverbell, Carolina Silverbell
Halesia diptera ♥ Twowing Silverbells
Hamamelis virginiana Witch-hazel
Hamelia patens ♥ Firebush
Helenium autumnale Fall Sneezeweed
Helenium spp. ✂ Sneezeweed

Helianthus agrestis Southeastern Sunflower
Helianthus angustifolius Swamp Sunflower; Narrow-leaved Sunflower
Helianthus carnosus Lakeside Sunflower, Flatwoods Sunflower
Helianthus debilis subsp. debilis ♥ East Coast Dune Sunflower
Helianthus debilis subsp. vestitus West Coast Dune Sunflower
Helianthus radula Rayless Sunflower
Helianthus spp. ♡ Sunflower
Heliopsis helianthoides var. gracilis Smooth Oxeye
Heliotropium angiospermum Scorpion-tail
Heliotropium curassavicum Seaside Heliotrope
Heliotropium gnaphalodes ♡ Sea-lavender, Sea-rosemary
Heterosavia bahamensis ♡ Maidenbush
Hibiscus aculeatus Pineland Hibiscus
Hibiscus coccineus ♥ Scarlet Hibiscus
Hibiscus furcellatus Sleepy Hibiscus
Hibiscus grandiflorus Swamp Rosemallow
Hibiscus laevis Halberd-leaf Rosemallow
Hibiscus moscheutos Swamp Mallow, Swamp Hibiscus, Swamp Rosemallow
Hibiscus poeppigii Fairy Hibiscus
Hydrangea quercifolia ♥ Oak-leaf Hydrangea
Hydrangia barbara ♡ Cowitch-vine, Climbing Hydrangea
Hydrocotyle umbellata Marsh Penny-wort
Hymenocallis latifolia ♥ Mangrove Spiderlily, Perfumed Spiderlily
Hymenocallis palmeri Alligator-lily
Hypericum cistifolium Roundpod St. John's-wort
Hypericum edisonianum Edison's Ascrum
Hypericum fasciculatum Sandweed
Hypericum hypericoides St. Andrew's-cross
Hypericum lissophloeus Smoothbark St. John's-wort
Hypericum myrtifolium Myrtle-leaf St. John's-wort
Hypericum tenuifolium ♡ Atlantic St. John's-wort
Hypericum tetrapetalum Four-petal St. Peter's-wort
Hyptis alata Musky Bushmint

I

Ilex ambigua Carolina Holly, Sand Holly
Ilex cassine ♥ Dahoon Holly
Ilex cassine var. myrtifolia ♡ Myrtle-leaf Holly
Ilex coriacea Large Gallberry
Ilex decidua Possum Haw
Ilex glabra Inkberry, Gallberry
Ilex krugiana Krug's Holly
Ilex opaca ♥ American Holly
Ilex opaca var. arenicola Scrub Holly
Ilex verticillata Winterberry
Ilex vomitoria ♥ Yaupon Holly
Ilex x attenuata ♥ East Palatka Holly
Illicium floridanum Florida Anise
Illicium parviflorum ♥ Yellow Star Anise
Ipomoea alba Moonflower
Ipomoea cordatotriloba Tievine
Ipomoea hederifolia Scarlet Morningglory
Ipomoea imperati Beach Morningglory
Ipomoea microdactyla Wild-potatoe Morning-glory, Man-in-the-ground
Ipomoea pes-caprae subsp. brasiliensis ♥ Railroadvine, Lavender Goatfoot Morning-glory
Ipomoea sagittata Glades Morning-glory
Ipomopsis rubra ♥ Standing-cypress
Iris savannarum Prairie Iris, Savanna Iris
Iris verna var. smalliana Dwarf Iris
Iris virginica Virginia Iris, Southern Blue-flag

Itea virginica ♥ Virginia-willow, Sweetspire

Iva frutescens Bigleaf Marsh-elder

Iva imbricata Seacoast Sumpweed

J

Jacquemontia pentanthos Skyblue Jacquemontia, Skyblue Clustervine

Jacquemontia reclinata Beach Jacquemontia

Jacquinia keyensis Joewood

Juglans nigra Black Walnut

Juncus effusus Soft Rush

Juncus roemerianus Needle Rush

Juniperus virginiana ♥ Eastern Red Cedar

Justicia angusta Everglades Water-willow, Pineland Water-willow

K

Kalmia latifolia ♥ Mountain Laurel

Koanophyllon villosum ✂ Florida Shrub Thoroughwort

Kosteletzkya pentacarpos ✂ Saltmarsh Mallow

Krugiodendron ferreum Black Ironwood, Leadwood

L

Lachnanthes carolina Redroot

Laguncularia racemosa White Mangrove

Lantana depressa var. *depressa* ♥ Gold Lantana

Lantana involucrata ♥ Wild Lantana, Wild Sage

Leucothoe axillaris Coastal Dog-hobble

Leucothrinax morrisii ✂ Brittle Thatch Palm, Key Thatch Palm

Liatris elegans Blazing-star

Liatris gracilis Slender Blazing-star

Liatris ohlingerae Florida Blazing-star

Liatris spicata ♥ Spiked Blazing-star, Gayfeather

Liatris spp. Blazing-star

Liatris tenuifolia Shortleaf Blazing-star, Shortleaf Gayfeather

Lilium catesbaei Pine Lily

Linaria canadensis ✂ Canadian Toadflax

Lindera benzoin Spicebush

Lippia stoechadifolia ✂ ♥ Southern Fogfruit; Southern Matchsticks

Liquidambar styraciflua ♥ Sweetgum

Liriodendron tulipifera ♥ Tulip-tree, Yellow-poplar

Litsea aestivalis Pondspice

Lobelia cardinalis ♥ Cardinal Flower

Lonicera sempervirens ♥ Coral Honeysuckle

Ludwigia repens Creeping Seedbox

Lupinus diffusus Sky Blue Lupine

Lupinus perrenis Sundial Lupine

Lycium carolinianum Christmasberry

Lygodesmia aphylla Rose-rush

Lyonia ferruginea Rusty Lyonia

Lyonia fruticosa Staggerbush

Lyonia lucida Fetterbush, Shiny Lyonia

Lyonia mariana Piedmont Staggerbush

Lysiloma latisiliquum ♥ Wild-tamarind, False Tamarind

Lythrum alatum var. *lanceolatum* Loosestrife

M

Magnolia grandiflora ♥ Southern Magnolia

Magnolia macrophylla var. *ashei* Ashe's Magnolia

Magnolia pyramidata Pyramid Magnolia

Magnolia tripetala Umbrella Magnolia

Magnolia virginiana ♥ Sweet-bay Magnolia

Malus angustifolia Southern Crabapple

Manilkara jaimiqui subsp. emarginata Wild Dilly
Marshallia graminifolia Grassleaf Barbara's Buttons
Melanthera nivea Snow Squarestem, Salt & Pepper
Melochia tomentosa Tea Bush, Woolly Pyramidflower
Miconia bicolor ♡ Florida Tetrazygia, West Indian-lilac, Florida Clover Ash
Mimosa quadrivalvis ♡ ♡ Florida Sensitive Brier
Mimosa strigillosa ♡ Sunshine Mimosa, Powderpuff
Mitchella repens Partridge Berry, Twinberry
Monarda punctata ♡ Dotted Horsemint
Morella caroliniensis ♡ Swamp Candleberry, Evergreen Bayberry
Morella cerifera ♡ ♡ Wax Myrtle
Morella inodora ♡ Odorless Wax Myrtle
Morinda royoc Cheese Plant, Indian Mulberry
Morus rubra Red Mulberry
Mosiera longipes Long-stalked Stopper, Trailing Eugenia
Muhlenbergia capillaris ♡ Hairgrass, Muhly Grass
Myrcia neopallens ♡ Pale Lidflower, Spicewood
Myrcia zuzygium ♡ Myrtle-of-the-river
Myrcianthes fragrans ♡ Simpson's Stopper, Twinberry
Myrsine cubana ♡ ♡ Myrsine, Colicwood

N

Nekemias arborea ♡ Pepper-vine
Nelumbo lutea ♡ Lotus-lily, Yellow Lotus, American Lotus
Nephrolepis biserrata Giant Swordfern
Nephrolepis exaltata ♡ Wild Boston Fern
Neptunia pubescens Tropical Neptunia, Tropical Puff
Nolina brittoniana Scrub Beargrass, Britton's Beargrass
Nuphar advena ♡ Cowlily, Spatterdock
Nymphaea elegans Blue Water-lily
Nymphaea jamesoniana Sleeping Beauty Water-lily
Nymphaea mexicana ♡ Yellow Water-lily
Nymphaea odorata ♡ White Water-lily
Nymphoides aquatica Floating Hearts
Nymphoides cordata Little Floating Hearts
Nyssa aquatica Water Tupelo
Nyssa biflora ♡ Swamp Black Gum, Swamp Tupelo
Nyssa ogeche Ogeechee Tupelo, Ogeechee-lime
Nyssa sylvatica Black Gum, Tupelo

O

Oclemena reticulata ♡ White-top Aster
Oenothera laciniata ♡ ♡ Cutleaf Evening-primrose
Oplismenus setarius ♡ Bristle Basketgrass
Opuntia austrina ♡ Prickly-pear Cactus
Opuntia spp. ♡ Erect Prickly-pear Cactus
Orontium aquaticum Golden-club, Neverwet
Osmunda regalis var. spectabilis Royal Fern
Osmundastrum cinnamomeum ♡ ♡ Cinnamon Fern
Ostrya virginiana American Hophornbeam, Eastern Hophornbeam, Ironwood
Oxalis corniculata ♡ Common Yellow Woodsorrel
Oxydendrum arboreum Sourwood

P

Palafoxia integrifolia Many-wings, Coastalplain Palafox
Panicum hemitomon Maidencane
Panicum virgatum Switchgrass
Paronychia rugelii ♡ ♡ Sand Squares, Rugel's Nailwort
Parthenocissus quinquefolia ♡ Woodbine, Virginia Creeper
Paspalum vaginatum Seashore Paspalum
Passiflora incarnata Passion Vine, Maypop, Purple Passion Flower

Passiflora pallens Pineland Passionflower, Pale Passionvine
Passiflora suberosa Corkystem Passion-flower
Peltandra sagittifolia Spoonflower, White Arrow Arum
Penstemon australis Slender Beardtongue
Penstemon laevis Eastern Smooth Beardtongue
Penstemon multiflorus ♡ Manyflower Beardtongue
Pentalinon luteum ♡ Wild Allamanda, Hammock Viperstail
Peperomia obtusifolia Florida Peperomia
Persea borbonia var. borbonia ♡ Red Bay
Persea humilis ♡ Scrub Bay
Persea palustris Swamp Bay
Philadelphus inodorus ♡ Scentless Mockorange
Phlebodium aureum Golden Polypody Fern
Phlox spp. ♡ Phlox
Phoebanthus spp. ♡ Phoebanthus
Phyla nodiflora Frogfruit, Turkey Tangle Frogfruit, Capeweed
Physalis walteri ♡ Walter's Groundcherry
Physocarpus opulifolius Ninebark
Physostegia purpurea ♡ Obedient Plant, Eastern False Dragonhead
Phytolacca americana Pokeweed
Picramnia pentandra Florida Bitterbush
Pieris phyllireifolia Climbing Heather, Climbing Pieris, Fetterbush
Piloblephis rigida Pennyroyal
Pinckneya bracteata Hairy Fevertree
Pinus clausa Sand Pine
Pinus echinata Shortleaf Pine
Pinus elliotii ♡ Slash Pine
Pinus glabra Spruce Pine
Pinus palustris ♡ Longleaf Pine
Pinus serotina Pond Pine
Pinus taeda ♡ Loblolly Pine
Piscidia piscipula Jamaica-dogwood, Fish-poison Tree
Pithecellobium keyense ♡ Florida Keys Blackbead
Pithecellobium unguis-cati Cat's-claw, Catclaw Blackbead
Pityopsis graminifolia ♡ Silk-grass, Silkgrass
Platanus occidentalis ♡ Sycamore, American Planetree
Pluchea spp. ♡ Camphor-weed
Pluchia odorata ♡ Sweetscent
Plumbago zeylanica ♡ Wild Plumbago
Pogonia ophioglossoides Rose Pogonia, Snakemouth Orchid
Polygonum nesomii ♡ Largeflower Jointweed, Sandhill Wireweed
Polygonum polygamum ♡ Jointweed, October Flower
Polystichum acrostichoides Christmas Fern
Pontederia cordata Pickerelweed
Prunus americana ♡ Wild Plum
Prunus angustifolia ♡ Chickasaw Plum
Prunus caroliniana Cherry-laurel, Laurel Cherry
Prunus geniculata Scrub Plum
Prunus myrtifolia West Indian Cherry
Prunus serotina Black Cherry
Prunus umbellata ♡ Hog Plum, Flatwoods Plum
Pseudophoenix sargentii ♡ Florida Cherry-palm, Buccaneer Palm
Psilotum nudum Whisk Fern
Psychotria ligustrifolia Bahama Wild-coffee
Psychotria nervosa ♡ Shiny-leaf Wild-coffee, Wild Coffee
Psychotria tenuifolia ♡ Dull-leaf Wild-coffee, Shortleaf Wild Coffee
Ptelea trifoliata Wafer-ash, Common Hoptree
Pteridium aquilinum Bracken Fern
Pteris bahamensis Bahama Brake Fern, Pineland Brake Fern
Pyrhopappus carolinianus ♡ False Dandelion, Carolina Dessert Chickory

Quadralla jamaicensis ♡ Jamaica Caper-tree
Quercus alba White Oak
Quercus arkansana Arkansas Oak
Quercus austrina Bluff Oak, Bastard White Oak
Quercus chapmanii Chapman's Oak
Quercus falcata Spanish Oak, Southern Red Oak
Quercus geminata ♡ Sand Live Oak
Quercus hemispherica ♡ Diamond Oak, Sand Laurel Oak, Upland Laurel Oak
Quercus laevis Turkey Oak
Quercus laurifolia Laurel Oak, Swamp Laurel Oak
Quercus lyrata Overcup Oak
Quercus marilandica Black-jack Oak
Quercus michauxii Basket Oak, Swamp Chestnut Oak, Cow Oak
Quercus muehlenbergii Chinquapin Oak
Quercus myrtifolia Myrtle Oak
Quercus nigra Water Oak
Quercus pagoda Cherrybark Oak
Quercus phellos Willow Oak
Quercus shumardii ♡ Shumard Oak
Quercus stellata Post Oak
Quercus velutina Black Oak
Quercus virginiana ♡ Live Oak

R

Randia aculeata White Indigo Berry
Ratibida pinnata Prairie Coneflower
Reynosia septentrionalis Darling Plum, Red Ironwood
Rhabdadenia biflora Rubber-vine, Mangrove Rubber-vine
Rhapidophyllum hystrix ♡ Needle Palm
Rhexia spp. ♡ Meadow-beauty
Rhipsalis baccifera Mistletoe Cactus
Rhizophora mangle Red Mangrove
Rhododendron austrinum ♡ Orange Azalea, Florida Azalea
Rhododendron canescens Wild Azalea, Piedmont Azalea, Pinxter Azalea
Rhododendron minus var. chapmanii Chapman's Rhododendron
Rhododendron viscosum Swamp Azalea
Rhus aromatica ♡ Fragrant Sumac
Rhus copallinum Winged Sumac
Rhynchospora colorata ♡ Fineleaf Whitetop Sedge, Starrush Whitetop
Rhynchospora latifolia ♡ Giant Whitetop, Sandswamp Whitetop
Rivina humilis ♡ Rouge Plant
Rosa carolina Carolina Rose
Rosa palustris Swamp Rose
Roystonea regia ♡ Royal Palm
Rudbeckia fulgida Orange Coneflower
Rudbeckia graminifolia ♡ Grassleaf Coneflower
Rudbeckia hirta Black-eyed Susan
Rudbeckia laciniata Cutleaf Coneflower
Rudbeckia mohrii Mohr's Coneflower
Rudbeckia mollis ♡ Softhair Coneflower
Rudbeckia spp. ♡ Blackeyed-susan
Ruellia caroliniensis Carolina Wildpetunia, Wild Petunia

S

Sabal etonia Scrub Palmetto
Sabal minor ♡ Dwarf Palmetto, Blue-stem Palmetto
Sabal palmetto ♡ Cabbage Palm, Sabal Palm
Sabatia brevifolia Shortleaf Rosegentian
Sabatia decandra ♡ Bartram's Marsh-pink
Saccharum giganteum Sugarcane Plumegrass
Sagittaria graminea Grassy Arrowhead
Sagittaria lancifolia Duck Potato, Lance-leaved Arrowhead, Bulltongue Arrowhead

Sagittaria latifolia Wapato, Common Arrowhead
Salix caroliniana Carolina Willow, Coastalplain Willow
Salix nigra Black Willow
Salvia azurea ♥ Blue Sage, Azure Blue Sage
Salvia coccinea ♥ Scarlet Sage, Tropical Sage, Blood Sage
Salvia lyrata Lyre-leaved Sage
Salvia misella ♡ Southern River Sage, Creeping Sage
Sambucus nigra subsp. canadensis Elderberry, American Elder
Sapindus saponaria Wingleaf Soapberry
Sassafras albidum Sassafras
Saururus cernuus Lizard's-tail
Scaevola plumieri Beachberry, Inkberry, Gullfeed
Schaefferia frutescens Yellowwood, Florida Boxood
Schoenoplectus californicus ♡ Giant Bulrush
Schoenoplectus pungens Three-square, Threesquare Bulrush
Scirpus cyperinus Woolgrass
Scutellaria integrifolia Rough Skullcap, Helmet Skullcap
Senna ligustrina ♥ Privet Senna, Privet Wild Sensitive Plant
Senna mexicana var. chapmanii ♥ Chapman's Sensitive Plant, Bahama Senna
Serenoa repens ♥ Saw Palmetto
Sesuvium portulacastrum Sea-purslane, Shoreline Seapurslane, Cenicilla
Seymeria spp. ♡ Blacksenia
Sideroxylon alachuense ♡ Alachua Buckthorn, silver Buckthorn, Clark's Buckthorn
Sideroxylon celastrinum Saffron-plum
Sideroxylon foetidissimum ♡ ♥ Mastic, False Mastic, Wild Olive
Sideroxylon salicifolium Willow-bustic, White Bully
Sideroxylon tenax ♥ Tough Buckthorn, Tough Bully
Silene catesbaei Fringed Campion
Silphium asteriscus ♥ Starry Rosinweed
Silphium compositum Kidneyleaf Rosinweed
Simarouba glauca Paradise Tree, Bitterwood
Sisyrinchium angustifolium ♡ ♥ Pointed Blue-eyed-grass
Smallanthus uvedalia ♡ Hairy Leafcup
Solidago odora ♡ Sweet Goldenrod, Anise-scented Goldenrod
Solidago odora var. chapmanii ♡ Chapman's Goldenrod
Solidago sempervirens ♥ Seaside Goldenrod
Solidago stricta Wand Goldenrod, Slender Goldenrod, Smooth Goldenrod
Sophora tomentosa var. truncata Yellow Necklacepod
Sorghastrum nutans Yellow Indiangrass
Sorghastrum secundum Lopsided Indiangrass
Spartina alterniflora Saltmarsh Cordgrass, Smooth Cordgrass
Spartina bakeri ♥ Sand Cordgrass
Spartina patens Marshhay Cordgrass
Spartina spartinae Gulf Cordgrass
Spigelia marilandica Woodland Pinkroot
Spiranthes odorata Fragrant Ladies'-tresses, Lesser Ladiestresses
Sporobolus junceus ♥ Pineywoods Dropseed
Sporobolus virginicus Seashore Dropseed
Stachys floridana Florida Hedge-nettle, Florida Betony
Stachytarpheta jamaicensis ♥ Blue Porterweed, Joee
Staphylea trifolia ♥ American Bladdernut
Stenanthium densum ♡ Crow Poison, Oseloa's Plume
Stewartia malacodendron ♥ Silky Camelia, Virginia Stewartia
Stokesia laevis ♥ Stokesia. Stoke's Aster
Styrax americanus American Snowbell
Styrax grandifolius Snowbell, Bigleaf Snowbell
Suriana maritima Bay-cedar
Swietenia mahagoni ♥ West Indian Mahogany
Symphotrichum adnatum ♡ Scaleleaf Aster, Clasping Aster
Symphotrichum carolinianum ♡ Climbing Aster

Symphyotrichum concolor ♡ Eastern Silver Aster
Symphyotrichum dumosum ♡ Bush Aster, Rice Button Aster
Symphyotrichum elliottii ♡ Elliott's Aster

T

Taxodium ascendens ♥ Pond Cypress
Taxodium distichum ♥ Bald Cypress
Taxus floridana Florida Yew
Telmatoblechnum serrulatum Swamp Fern
Teucrium canadense Wood-sage, Canadian Germander
Thalia geniculata ♡ Alligator Flag, Fireflag
Thelypteris spp. ♡ Maiden Fern
Thrinax radiata Florida Thatch Palm
Tilia americana ♡ Basswood, American Linden, Bee Tree
Torreya taxifolia Florida Torreya
Tradescantia ohimensis Ohio Spiderwort, Bluejacket
Tradescantia roseolens ♡ Longleaf Spiderwort
Triadenum virginicum ♡ Virginia Marsh St. John's-wort
Trichostema dichotomum Forked Bluecurls
Trillium spp. ♡ Trillium, Wakerobin
Tripsacum dactyloides ♥ Eastern Gamagrass, Fakahatchee Grass
Tripsacum floridanum ♥ Dwarf Fakahatchee Grass, Florida Gamagrass

U

Ulmus alata ♥ Winged Elm
Ulmus americana ♡ American Elm
Ulmus crassifolia Cedar Elm
Ulmus rubra Red Elm, Slippery Elm
Uniola paniculata Sea Oats
Uvularia spp. ♡ Bellwort, Merrybells

V

Vaccinium arboreum Sparkleberry, Farkleberry
Vaccinium corymbosum Highbush Blueberry
Vaccinium darrowii Darrow's Blueberry
Vaccinium myrsinites Shiny Blueberry
Vaccinium stamineum Deerberry
Vachellia choriophylla ♡ Cinnecord, Tamarindillo, Thornless Acacia
Vachellia farnesiana ♡ ♥ Sweet Acacia
Vallesia antillana Pearl Berry, Tearshrub
Varronia globosa ♡ Bloodberry, Butterfly-sage, Curacao Bush
Verbesina virginica Frostweed, White Crownbeard
Vernonia angustifolia Narrow-leaf Ironweed, Tall
Vernonia gigantea Tall Ironweed
Vernonia noveboracensis New York Ironweed
Viburnum acerifolium ♥ Maple-leaved Viburnum
Viburnum dentatum ♥ Southern Arrowwood
Viburnum nudum Possum Haw
Viburnum obovatum ♥ Small Viburnum, Walter's Viburnum
Viburnum rufidulum Southern Black Haw, Rusty Blackhaw
Viola spp. Violet
Vitis shuttleworthii Calusa Grape

W

Wisteria frutescens ♥ American Wisteria
Woodwardia areolata Netted Chain Fern
Woodwardia virginica Chain Fern

X

Ximenia americana Tallowwood, Hog-plum

Y

[Yucca aloifolia](#) ♥ Spanish Bayonet, Aloe Yucca

[Yucca filamentosa](#) Adam's Needle, Beargrass

[Yucca gloriosa](#) Spanish Dagger, Moundlily Yucca

Z

[Zamia integrifolia](#) ♡ ♥ Arrowroot, Coontie

[Zanthoxylum clava-herculis](#) ♥ Hercules-club

[Zanthoxylum fagara](#) ♥ Wild-lime, Colina, Lime Pricklyash

[Zephyranthes atamasca](#) ♥ Zephyr Lily, Rainlily, Atamasco Lily

[Zephyranthes simpsonii](#) ♥ Simpson's Zephyr Lily

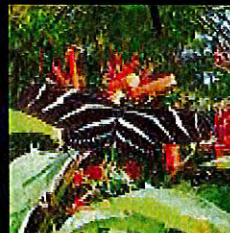
[Zigadenus glaberrimus](#) Fly Poison, Creeping Camus, Sandbog Deathcamas



South Florida
Edition

W A T E R W I S E

South Florida
Landscapes



Landscaping to Promote Water Conservation
Using the Principles of Xeriscape™

sfwmd.gov

BEFORE YOU DIG...CHECK YOUR TEMP

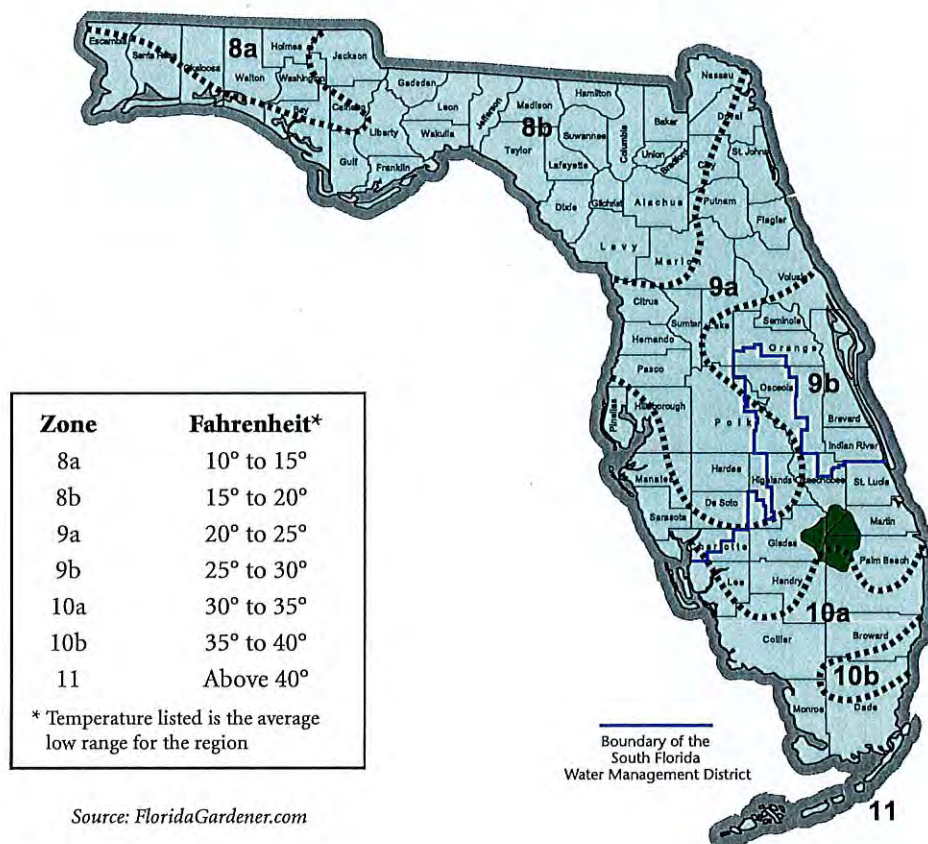
Before beginning any waterwise landscape, one of the most important considerations in determining what plants you can grow in your yard or garden is whether or not they will survive the climate and temperature in your area. Plant hardiness zones are a general guide to help you know which plants will grow where you live because plants can vary in the temperature extremes they can endure.

The U.S. Department of Agriculture Plant Hardiness Zone Map is the standard measure of plant hardiness throughout the United States. In South Florida, there are seven delineations between temperature zones ranging from 9a (20 to 25° F) to 11 (40° F and up).

Keep in mind that plant hardiness zones are only a general guide. Other conditions influence whether a plant will survive in your garden or yard. You must also consider soil types, rainfall, daytime temperatures, day length, wind, humidity and heat. Within your own yard, block and county, there are microclimates that affect how plants grow. One part of your yard may be hotter, colder, wetter, drier, shadier or sunnier; therefore, certain plants may do better in one spot than another.

Starting on page 18, you will find easy-to-read plant lists that will help you determine what plants will thrive in your yard or garden. The lists include the Florida temperature hardiness zone range, watering needs, salt tolerance, light range, plant type, size, growth rate and helpful comments from plant experts. South Florida landscapes are more than just queen palm trees and impatiens. You can select from dozens of beautiful waterwise trees, shrubs, flowers, vines, and groundcover suitable for South Florida. Get creative and enjoy your waterwise landscape!

Plant Hardiness Zones for Florida



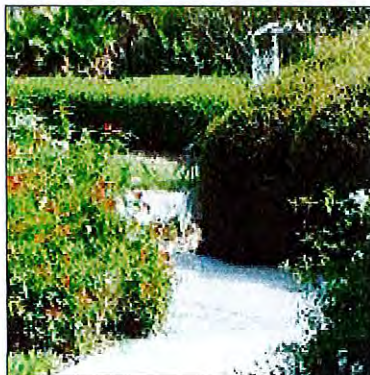
Source: FloridaGardener.com

W A T E R W I S E

South Florida Landscapes

Landscaping to Promote Water Conservation
Using the Principles of Xeriscape™

from the South Florida Water Management District



Contents

Introduction.....	2
What Is Xeriscape Landscaping?	2
The Seven Steps of Xeriscape	3
<i>Plan and Design – Step 1</i>	4
<i>Obtain a Soil Analysis – Step 2</i>	6
<i>Choose Proper Plants – Step 3</i>	7
<i>Use Turf Wisely – Step 4</i>	10
<i>Irrigate Efficiently – Step 5</i>	10
<i>Use Mulch – Step 6</i>	12
<i>Perform Proper Maintenance – Step 7</i>	13
Plants Not Recommended for Landscaping	15
List of Florida's Most Invasive Species.....	16
Plant Lists and Photographs.....	18
Glossary	76
Bibliography.....	inside back cover



INTRODUCTION

Florida is surrounded on three sides by water and its interior is filled with wetlands, thousands of lakes, and many rivers and streams. With all this water around, many people may not realize the need to **conserve** water. Despite Florida's apparent watery bounty, not all of that water is available for drinking or other uses by humans. In addition, Florida's weather is fickle—long periods of wet weather may be followed by long periods of dry weather. The state's leaders recognize the need to conserve water as a means to ensure the continued availability of this vital resource for everyone from year to year.

Preserving and protecting Florida's water resources is a main focus of the state's five water management districts. This guide is brought to you by the South Florida Water Management District in order to help you work with nature in our region's unique environment to establish a landscape that conserves water resources and protects water quality. Through use of the Xeriscape landscaping principles, everyone can help conserve resources.

Achieving a natural, healthy balance in your landscape starts by putting the right plant in the right place. Matching plants to conditions that exist in your area helps them thrive, once established, with little or no irrigation or chemicals. The seven principles of Xeriscape are explained in this guide. Scientific or other special terms appear in **bold**. These terms are listed in the glossary at the end of this guide and are defined in the context in which they are used in this guide. A comprehensive plant list is included to help you choose the best plants for your landscape. Resources and references for more specific information about gardening techniques are listed at the back of the guide.

Through this guide, we hope you'll find that when you work with nature, nature will work for you. And you'll be doing your part to ensure that our natural resources can be enjoyed today and by future generations.

WHAT IS XERISCAPE LANDSCAPING?

Xeriscape is quality landscaping that conserves water and protects the environment. Xeriscape landscaping is based on seven basic principles that can be successfully applied anywhere.

The main objective of Xeriscape is to establish and maintain a healthy landscape by matching the right plants with existing site conditions so that the use of additional resources, such as water, fertilizer, pesticides and labor, is minimized. In addition to helping conserve water resources, Xeriscape landscaping practices reduce the amount of pollutants reaching water bodies because fewer yard chemicals are used. Fertilizers and pesticides can contaminate water bodies when they are washed out of the yard with the rain, in **stormwater runoff**.

The term Xeriscape and the concept of Xeriscape were first developed in the southwestern United States during droughts in the early 1980s. Residents of the West learned that one way to save water was to develop landscapes with plants that occur naturally in the existing conditions, rather than perpetually trying to change the conditions. In Florida, Xeriscape landscaping can be as lush as Florida itself — Xeriscape is rocks and cactus only where they naturally occur.

The best time to establish a drought-tolerant Xeriscape landscape for your home or commercial property is long before a drought. Once established, the right plant in the right place will be highly self-sufficient, needing little help to survive nature's



extremes. Healthy, well-placed plants with deep, established root systems will need less help to survive a drought.

Conserving our water supply and reducing water pollution have become important issues in our growing communities. In many Florida homes, as much as half of household water is used outdoors, mostly for lawn and garden irrigation. Despite Florida's humid climate and abundant surface water bodies, water shortages do occur here. Demand can overtake supply, and regional droughts force Floridians to practice water conservation as a way of life.

THE SEVEN STEPS OF XERISCAPE

The seven simple steps of Xeriscape landscaping have been used by landscape professionals for years. Here is an overview of the seven principles; details of each principle are given in the following pages.

1. **PLAN AND DESIGN** — Make a sketch of the landscape site. Base the plan on site conditions, existing vegetation and **topography** — the natural features of the land. Assess the area's growing conditions and think through intended uses of the landscape. Landscapes are dynamic, so include elements of growth, time and change in your plan.
2. **OBTAIN A SOIL ANALYSIS** — Determine the soil composition, from sandy to clay, and test for the pH of the soil — its level of acidity or alkalinity. This information will help you decide which plants are best suited to the conditions of your yard.
3. **CHOOSE PROPER PLANTS** — When choosing new plants, match each spot in your landscape with plants that thrive in the specific conditions of that spot. Look for plants known to be resistant to disease and pests. Consider each plant's mature height and width, its need for sun, shade, soil and water, and its tolerance to salt or temperature. To find your plant temperature hardiness zone, please refer to the map on the inside front cover. Preserve as many existing trees and shrubs as possible, if they're healthy and if the root systems are not significantly impacted by construction. Appropriately placed Native vegetation

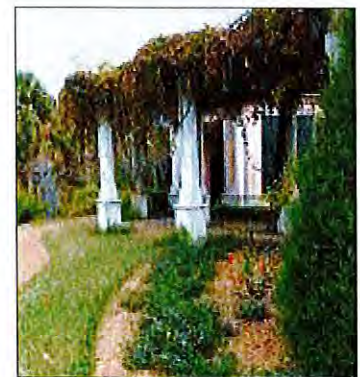
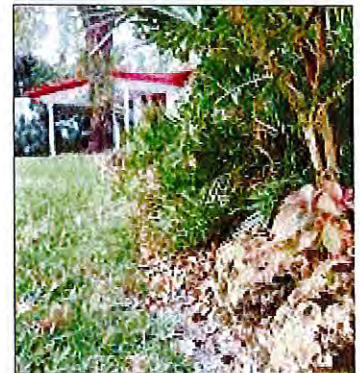
will remain healthy with minimal supplemental irrigation and care once established.

4. **USE TURF WISELY** — Grass is often a yard's largest water user, but it can still play a role in a water-conserving landscape. Plan **practical turf areas** where turf is most functional in the landscape plan, such as where children or pets will play, or for erosion control. In other areas, consider more water-thrifty alternatives such as groundcovers or mulched walkways.

5. **IRRIGATE EFFICIENTLY** — Group plants based on their water needs. Put moisture-loving plants in moist areas and plants that prefer well-drained sites in drier areas. Group together plants that may need irrigation so that water is only used in limited areas. Irrigate only when plants need water or when rain is inadequate. Use the right irrigation system, proper sprinkler head and spacing for each area.

6. **USE MULCH** — Mulch helps hold moisture in the soil, moderate temperature, slowly release nutrients, reduce weed growth and slow erosion. Spread mulch 2 to 4 inches thick, around shrubs and trees and on flower beds, but be sure to keep mulch from coming into direct contact with plant stems.

7. **PERFORM PROPER MAINTENANCE** — Keep plants healthy. Too much water and fertilizer promote weak growth, as well as increase pruning and mowing requirements. Remove weeds by hand before they get established and crowd out the plants you want. Watch for pests and make sure they're truly a problem before waging war, then do it organically whenever possible.



Plan and Design – Step 1

Whether you are developing a new Xeriscape landscape or renovating an existing landscape, proper planning and design are important. Think about the various areas of your landscape in terms of how they should be developed for different uses and how much space you should allot to each area.

As you plan each area, consider several different arrangements. For example, is a fence, wall or hedge more appropriate for screening and/or security? How much space is needed for active recreation, a garden or for patio entertaining? Only after these decisions are made should you begin thinking about what plants to use.

BEGIN WITH A BASE MAP

A base map is a plan of your property drawn to scale on graph paper showing the location of the house, its orientation to the sun, other structures on the site, unusual features and existing vegetation. Accuracy in the base map will help you determine if your site will accommodate all of your plans. Later, it will help determine the quantity of any construction materials and plants needed.

Next, lay a sheet of tracing paper over the base map and label it "Site Analysis." Use arrows to indicate the direction of desirable views you want to emphasize and any undesirable views you want to screen. Use arrows to indicate the drainage patterns of the property, including any low spots or eroded areas. Make plans to correct potential drainage problems before planting. This may require re-grading, bringing in additional soil, building retaining walls or shaping terraces. Any changes in the existing landscape should be subtle so that the natural character of the landscape is retained.

PLAN FOR DIFFERENT USE AREAS

To begin your Xeriscape plan, overlay the base map of your property and site analysis sheet with another piece of tracing paper. On this sheet indicate the public, private and service areas of your landscape. See *figure 1*. Consider how these areas

will be developed based on space requirements for each activity.

The public area is the highly visible area that most visitors see, such as the entry to the home. In a traditional landscape, this area typically receives the most care, including the most water. Therefore, the careful design of this area is important for water conservation. It is possible to design this area to require minimal water and maintenance without sacrificing quality or appearance.

The private area of the landscape, usually the backyard, is where most outdoor activity occurs. It is generally the family gathering area. It may also include a vegetable garden or fruit trees. The landscape in this area needs to be functional, attractive and durable, but it also should be designed to require less water than the public area of the landscape.

The service area is the working or utility area of the landscape, an area usually screened from view and containing such items as garbage cans, outdoor equipment, air-conditioning units or doghouse. In terms of routine maintenance, this area would be designed to require the least care and water of the three areas.

ESTABLISH WATER-USE ZONES

In addition to dividing the landscape into use areas, a Xeriscape plan further divides the landscape into three water-use zones: high or **oasis** (regular watering), moderate or drought-tolerant (occasional watering) and low or natural (rainfall watering). See *figure 2*. There may be several of these zones within an individual landscape. High water-use zones, or oasis zones, are highly visible, high maintenance areas of the landscape, such as the area around the patio where plants are watered regularly in the absence of rainfall. In the moderate water-use zones, established plants are watered only when they wilt or show other symptoms of moisture stress.

In the low water-use zones, plants are watered by natural rainfall and would not be irrigated. For greatest water conservation, design as much of your landscape as possible into low water-use zones. Most

people are surprised to learn that the majority of our woody ornamental trees and shrubs, turfgrasses, some herbaceous perennials and even some annuals grow well in low water-use zones where they need no irrigation once they are established.

Expect a slight loss of quality during extended dry periods, but don't be alarmed. Many plants will literally shut down during drought and cease growing. Bahia grass will go dormant and turn brown during drought, then bounce back with the first rains. Learning to accept this "less than perfect" appearance during dry periods is one of the most difficult concepts to overcome in any landscape.

One exception to the water zone rule is newly planted ornamental plants and turfgrasses. These plants require regular irrigation during the establishment period (30 to 60 days) regardless of their intended water-use zone.

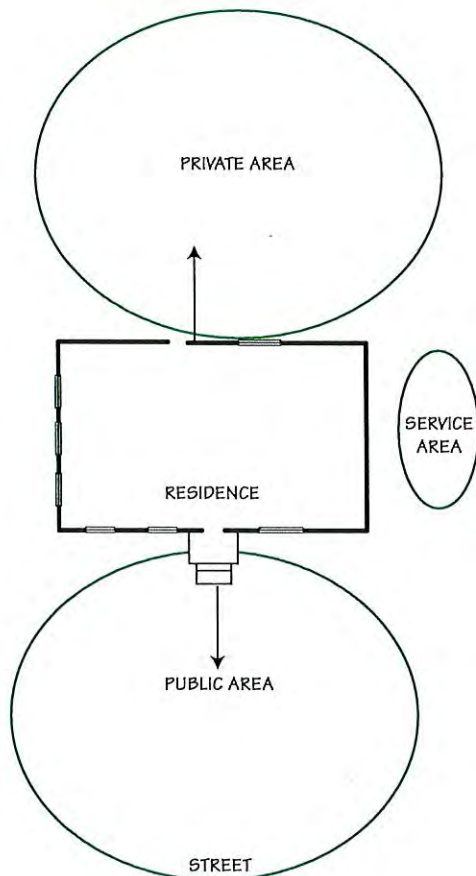


Figure 1 The basic use area of a typical residential lot

Now, add a new overlay of tracing paper to the base map and sketch your desired water-use zones. The landscape is beginning to take shape and you can visualize the form of the various beds, but construction materials and plants have not yet been identified.

DEVELOP A MASTER PLAN

Once you have settled on a design scheme and a water management arrangement, give form and definition to the various spaces in your plan. With the identification of planting spaces as well as edging materials, groundcovers and paving, the Master Plan begins to take form. This is a plan showing the final product of your efforts. Straight lines or smooth flowing curves are best—tight curves or unnecessary bends can be maintenance problems. Use right angles or gentle curves, and avoid acute angles that are difficult to maintain and irrigate. Remember that

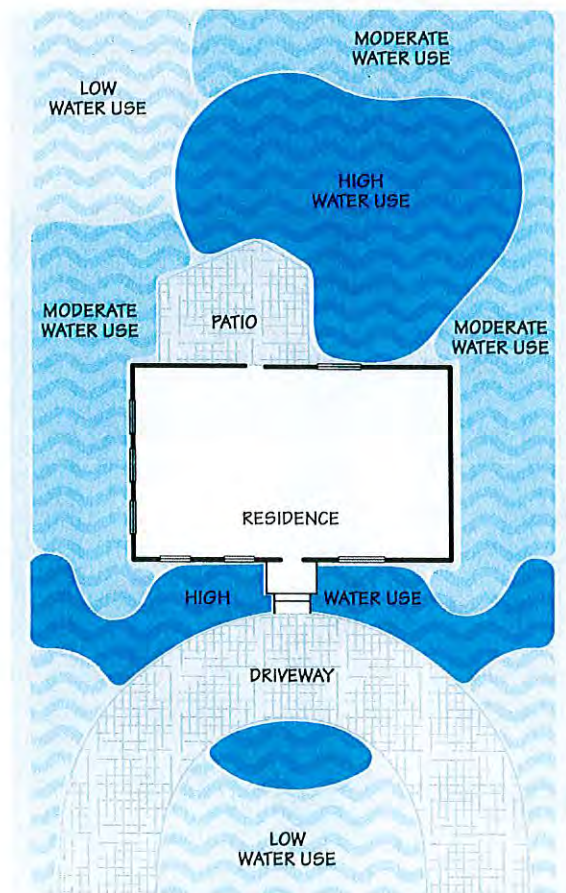


Figure 2 Diagram of water use zones of property

simplicity in the design will ensure easy maintenance and water-use efficiency. A prototype Master Plan is shown in figure 3.

FIT PLANTS TO THE DESIGN

Once you achieve the style and overall effect you desire, it is time to select plants to fill the assigned spaces. It is very important to select plants that complement and accent the good features of the architecture and construction materials rather than overpower them.

Group plantings to conform to the shape of plant beds. Avoid rigid or formal, geometric plantings as much as possible.

Place plants at the proper spacing in the landscape to ensure easy maintenance and more efficient use of water. It is extremely important to space plants far enough apart so they can achieve their mature size without being crowded.

Select plants that have sizes and forms that conform to their location without having to be sheared or frequently pruned to keep them in bounds.

Choose plants with the same shapes and ultimate sizes as the space you want them to fill.

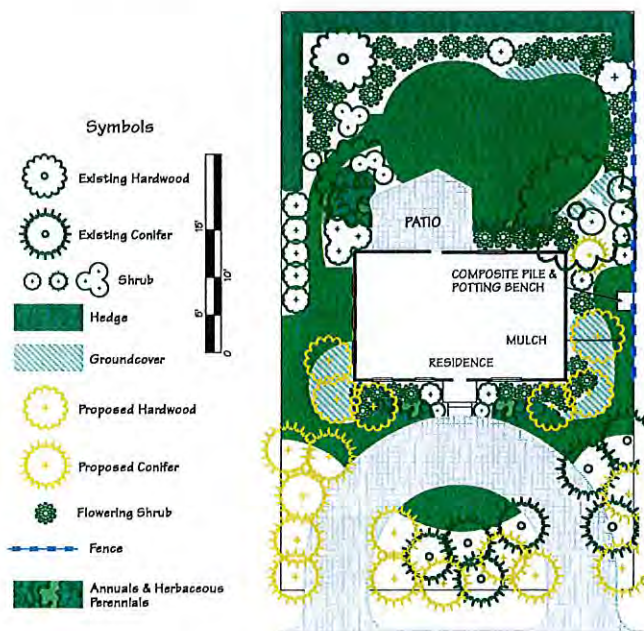


Figure 3 Master Plan for incorporating Xeriscape principles. Note how the character of this landscape is very similar to that of a traditional landscape.

Obtain a Soil Analysis – Step 2

INSPECT YOUR SOIL

A thorough analysis of both the physical and chemical characteristics of the soil is important when developing a waterwise landscape. Each soil has its own unique structure and texture, drainage pattern, pH, nutrient content and need for amendments and fertilizer. To complicate matters, there may be several different soil types within an individual landscape, or the soil may consist of fill dirt brought onto the site. Soils are seldom perfect, and most of them can be improved in some way to ensure best plant growth.

SOIL ANALYSIS SAVES GUESSWORK

Before landscaping, take a soil sample to your County Cooperative Extension Service for testing.

DON'T ADD ORGANIC MATTER TO THE PLANTING HOLE FOR TREES AND SHRUBS

For years, we have added organic matter like peat moss, animal manure or compost to the planting hole to enrich the soil, to conserve moisture and to improve plant growth. But recent research shows no benefit from amending the planting hole. In fact, organic matter added to individual planting holes in soil acts like a sponge in a bathtub, holding excess moisture around plant roots after irrigation or rainfall. Waterlogged soils that suffocate plant roots are a leading cause of plant death. Even in well-drained sandy soils, organic matter encourages the roots of plants to stay within the hole instead of growing out to explore the native soil.

When planting individual trees and shrubs, dig a large planting hole at least two times wider than the root ball of the plant. See figure 4. Research at the University of Florida shows that plants transplanted into a large planting hole get established more quickly and develop a significantly larger root system than those in a small hole no larger than the root ball. A large, extensive root mass improves the plant's ability to absorb moisture from the soil and helps the plant survive drought.

Next, make certain the top of the root ball is level or slightly above the soil surface, then backfill with

the same soil removed from the hole. Do not add amendments to the hole. Simply backfill with the native soil after removing stones, sticks and other debris. Tamp the soil lightly to eliminate air pockets. Water thoroughly, and then add an organic mulch to conserve moisture.

When planting a group of shrubs, cultivate the soil throughout the area as deeply as possible. Cultivation changes the structure of the native soil and provides a good environment for growth.

IMPROVE THE STRUCTURE OF POOR SOILS

Certain native soils such as dense, poorly drained clays silts have such poor structure that plant growth suffers unless they are improved. Poorly drained soils can be improved in several ways. Sometimes deep cultivation will break apart a hard layer of soil (hardpan) several inches below the soil surface and improve drainage.

On the other hand, sandy soils that tend to dry out rapidly and hold little moisture will benefit from organic matter such as aged animal manure or compost incorporated uniformly throughout the planting bed. This is particularly helpful when plants requiring water, such as annuals, are to be grown. However, instead of adding the organic matter to the planting hole, apply 3 to 6 inches on the soil surface and incorporate it into the soil using a rotary tiller.

When selecting plants for a Xeriscape landscape, keep in mind this important fact: It is not the plants we select that save water, but our ability to locate them in the landscape appropriately and to manage them properly that determines their water needs.

Any ornamental plant or turfgrass presently on the market can be used in a Xeriscape-type landscape. In fact, you may be surprised to learn just how many plants can thrive without any supplemental water once they are established. The key is to identify the water needs of the plant you select, then group it in the landscape with other plants having similar needs for water. By doing this, supplemental irrigation can be applied most efficiently to those plants that require it. The result is maximum water conservation.

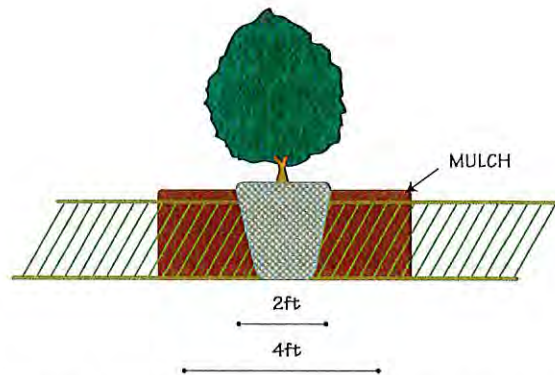


Figure 4 Diagram of properly planted shrub. Proper planting is the key to healthy root growth and drought tolerance of trees and shrubs.

Also, design turf in practical shapes that can be efficiently irrigated and maintained. The shape of a turf area has a direct impact on water use and waste. Long, narrow strips of turf are hard to water efficiently. Turf areas of the same size that are square or rounded are practical. As irrigated space is reduced, water savings increase.

Choose Proper Plants – Step 3

Choose plants that can survive on normal rainfall in your area or that require minimal irrigation. Existing native plant communities are an example of the “right plant in the right place.” There are also non-native plants cultivated specifically for Florida conditions that are water-efficient and resistant to disease and pests. However, there are also some plants that do too well because they don’t have any natural balances in the Florida environment, and they become highly invasive. These plants have *no* place in a Xeriscape landscape.

And remember, the success of your Xeriscape landscape depends as much on where you locate plants as on what plants you use. Plant it smart!

Learn each plant’s

- Mature size (height and width)
- Sun and shade requirements
- Soil needs
- Water needs
- Salt and cold tolerances

Match these factors with your soil and climatic conditions.

DO YOU NEED SALT-TOLERANT PLANTS?

Many areas in Florida have salt prevalent in the air and the water. This is particularly true near the coast and salt marshes. Salt can even find its way into wells. Exposure to salt may severely damage or kill some plants so if necessary, choose plants that can tolerate such exposure. Salt is alkaline, so a plant's tolerance for salt indicates its tolerance to alkalinity.

Where does this salt originate? Homes near the beach experience salt spray, with stiff winds blowing fine particles of salt and sand onto plants. Different plants can take varying degrees of this salt exposure. Some can't tolerate it at all.

Irrigation water may also be salty, or **saline**. In some areas, the water taken from the ground is naturally high in salt. Other areas suffer from saltwater intrusion, where salt water moves underground into freshwater aquifers due to overpumping of the aquifer. If the salinity level in irrigation water is too high, the water can kill plants. Also, be aware that some household water treatment systems add salt to the water to remove iron or other minerals. Don't use this water for plants.

Use this guide and consult a plant specialist to determine if a plant is salt-tolerant. If you suspect salt problems, have your water tested for salt content.

The diverse South Florida landscape includes various plant communities. Different plant communities often converge gradually in what are called **ecotones** — regions where one ecosystem blends into another. Sometimes pockets of one community are surrounded by another.

Observing the differences in ecotones can help determine differences in home landscapes and guide plant selection for microclimates throughout the landscape.

FLORIDA'S PLANT COMMUNITIES

Coastal Uplands

BEACH DUNE SYSTEMS — Alkaline to neutral soils of coarse sand and shell; well drained, with some salt content. Sea oats, sea grapes and dune sunflowers are a few examples of beach dune plants.



Coastal scrub

MARITIME FORESTS — Soil pH moderately alkaline to neutral; sandy with some shell. Gumbo limbo, bay and oak trees are found in maritime forests.

Pine Flatwoods

The most common plant community in Florida. Acidic, sandy soil with a hardpan layer 1–3 feet below. Slash pines, gallberry and grasses are common in pine flatwoods.

Sandhills

High pinelands of open longleaf pine with wiregrass, shrubs or turkey oaks.

Hardwood Forests

Hardwood forests occur in patches in temperate areas of Florida. The soils are acidic and sandy.

UPLAND MIXED FORESTS — Occur throughout Florida's northern panhandle region on upland clay soils. Magnolia, beech, oak and maple trees are found here.

UPLAND MESIC HARDWOOD FORESTS — Oak-hickory to pine-oak-hickory; range through central to west-central Florida on rich upland soils and clay hills. Sweetbay, holly and oaks are common in this community.

Forests of Abundant Cabbage Palms

Sand over **marl**; flat hammocks of cabbage palms and live oaks; rarely flooded.

Rocklands

The uplands of southern peninsular Florida and the Keys with diverse tropical trees and plants.

PINE ROCKLANDS — Porous limestone with sandy **humus** and marl; good drainage. Pine and palmettos dominate with numerous rare plants.

TROPICAL HARDWOOD HAMMOCKS — Alkaline limestone with moist humus. A range of **understory** plants and a diverse canopy including bromeliads, orchids and ferns.

Prairies

DRY PRAIRIES — Similar to pine flatwoods without the pine overstory; dry prairies occur in central to west central Florida. Scrub oaks, saw palmetto and wiregrass are common in dry prairies.

WET PRAIRIES — Herbaceous plants dominate with sparse woody species; often inundated. Sawgrass, slash pines and wax myrtle are found in wet prairies.

Scrub

Includes Florida's rarest plants and animals. Soils sandy, infertile and well-drained. Sand pine, oaks and rosemary can be found in scrub areas.

SCRUB CYPRESS — South Florida community with thin marl soils over limestone; scrub pond cypress with grasses and sedges.

Cypress Swamp Forests

Inundated most of the year, with epiphytes growing in the cypress canopy, and ferns and aquatic plants growing among cypress knees below.

Wetland Forests

SWAMP FOREST — Usually inundated stands of cypress, maples, hickory and ash.

HYDRIC HAMMOCK — Occasionally flooded with evergreens, maples, water oaks, elms and palms.

Coastal Saline Wetlands

COASTAL SALTWATER MARSHES — Grasses and rushes dominate; mostly north and west.

MANGROVE SWAMPS — Central and southern coasts with heavy muck created by leaf litter and alternate flooding and draining. Mangroves, buttonwood and sea oxeye daisy thrive in mangrove swamps.

WHAT TO PLANT

Plant lists should be generated for the different areas of the landscape based on growing conditions and desired characteristics.

Plantings should be placed with consideration for changes which will take place over time. In natural plant communities, these changes are called **succession**. **Succession** is the evolution of plants starting out, maturing, being replaced by other plants and eventually developing to a climax, or a balanced, mature ecosystem.

In most landscapes, succession is halted by deliberate maintenance practices. Yet plants tend to strive toward succession. By planning for each plant's mature state, a dynamic landscape can be planned to include natural changes.

When plants are first put into a landscape, the area should look unfinished as the landscape must be given space and time to grow. Plan to replace sun-loving plants with shade-tolerant plants as the larger elements in the landscape, such as trees and shrubs, grow and create shade.

Many so-called shrub species are actually 20-foot multi-trunked trees. Select plant species that will mature to a height and width that will fit the location.



Cypress swamp

If you want a shrub that only grows 2–4 feet tall, find a dwarf variety or use ornamental bunch grasses or flowering perennials like pentas and scarlet milkweed.

PLANTING FOR EFFICIENT WATER USE

Group plants in appropriate conditions according to their water needs. If plant placement is done correctly, once plants are established little to no supplemental irrigation will be necessary.

However, when plantings need supplemental watering, choose the right irrigation heads. Turf areas and planting beds should always be in separate irrigation zones. This separation allows for different irrigation schedules and different irrigation heads, such as pop-ups for turf, or drip heads for individual specimen plants such as shrubs or perennials.

NATURAL ZONE — In this area, place plants that have adapted to the wet and dry extremes of Florida's climate so that regular watering (once plants are established) won't be necessary, except during prolonged drought.

DROUGHT-TOLERANT ZONE — In this area, place plants that can survive extended periods of time without rain or supplemental irrigation.

OASIS ZONE — In the **oasis** zone, usually a small area, colorful ornamental plants may be chosen that may require extra water or care.

Plants native to Florida can play a very dependable role in the landscape. Many of Florida's plants have evolved through periods of extreme wet and then dry weather, so they survive through drought and don't get root rot standing in water. They have also developed defenses to the diseases, fungi and insects found in Florida. Many tolerate the high winds that occur during tropical storms and hurricanes.

Strive to establish a yard that is largely sustained by existing conditions, then if specialty plantings such as vegetables or roses are desired, a more labor- and resource-intensive planting bed can be created in one or two areas.

Remember, the overriding guidance should be to put the right plant in the right place.

Use Turf Wisely – Step 4

Grass can be a practical part of your landscape in the right place, for example, in a play area for children. Follow these simple tips for a healthy lawn and to reduce maintenance:

- **ADD ORGANIC MATTER.** This improves water retention of the soil and turf health.
- **GO LIGHT ON THE FERTILIZER.** Fertilization stimulates growth and increases water needs. If you do fertilize, use a slow-release nitrogen product. These products won't be washed away like liquid or fast-release fertilizers, which can contaminate waterways through stormwater or irrigation runoff.
- **LEAVE SHORT GRASS CLIPPINGS WHERE THEY FALL WHEN YOU MOW.** This reduces the lawn's need for both water and fertilizer. However, remove thick patches of clippings, which will decay and kill the grass.
- **RISE TO NEW HEIGHTS.** That is, raise the height of your lawn mower blades to the highest setting. When you mow the grass, remove no more than one-third of the leaf blade. Cutting grass shorter than this may stress the grass and may also decrease the depth to which roots will grow, increasing the need for water. Most St. Augustine grass and bahia grass varieties should not be mowed below 3 inches in height.
- **KEEP A SHARP CUTTING EDGE.** When lawn mower blades are sharp, they give a clean cut. Grass torn and shredded by dull blades suffers stress, requiring more water.
- **CONSIDER ALTERNATIVES TO GRASS.** Grass can be a useful plant. Use grass in areas where children or pets play, or for erosion control. In low-use areas, consider drought-tolerant plant beds, groundcovers, mulch, walkways or other alternatives that require little or no water.

Irrigate Efficiently – Step 5

PROPER DESIGN IS IMPORTANT. The installation of an efficient sprinkler system begins with good design. The system must be capable of applying water uniformly over the desired area with a minimum of over-spray into adjacent areas.



CHECK THE APPLICATION RATE OF YOUR SPRINKLER SYSTEM. Application rate is the rate at which a sprinkler system applies water to the soil surface, measured in inches per hours (in/hr). If application rates exceed the absorption capacity of the soil, then runoff occurs. Problems with runoff are more likely to occur in clay soils that have a low intake capacity.

Rotary sprinklers usually have application rates of 0.25 to 0.50 inches per hour and rarely cause runoff. Spray heads, on the other hand, typically have application rates between 1 and 2 inches per hour and may cause runoff on heavy soils, especially where slopes are greater than 10 percent. If runoff occurs, turn the system off for an hour or two to let the water soak in, and then apply the remainder of the water.

Determine the application rate of a sprinkler system by placing three or four rain gauges or empty tuna cans at random on an irrigated area for a predetermined length of time (usually one hour). By knowing the application rates of your sprinkler system, you will know how long to operate the system to apply a given amount of water and will avoid wasting water. Average water level within the gauges

or tuna cans is a measure of the output of the system (in/hr). Repeat this procedure in each sprinkler zone, particularly if different types of sprinklers are used on different zones.

ADJUST SPRINKLER HEADS AS NEEDED. Improper adjustment of sprinkler heads not only wastes water but also may damage buildings or cause accidents if the water is allowed to spray onto buildings, public streets or sidewalks. Carefully adjust the radius and arc of part-circle sprinklers to prevent undesirable over-spray. Check the system several times during the year to ensure proper adjustment.

OPERATE SPRINKLERS BETWEEN 4 P.M. AND 10 A.M. Time of application affects water-use efficiency. The best time to irrigate with sprinklers is between 4 p.m. and 10 a.m. since the least amounts of sunlight and evaporation occur during these hours.

GUIDELINES FOR IRRIGATING THE LANDSCAPE

AN AUTOMATIC CONTROLLER CAN HELP TO SAVE WATER. An automatic controller attached to the irrigation system turns the system on and off and controls the water flow through the various zones according to a pre-set time clock. It allows you to set the length of time each zone operates as well as the days of the week and time of day the system operates.

However, an automatic controller does not relieve you of the need to closely monitor its operation. Controllers should be re-programmed frequently during the growing season because water needs change from week to week.

A rainfall sensor or rain switch attached to the controller detects rainfall and prevents the irrigation system from operating if significant rainfall has occurred. Another type of sensor measures soil moisture and overrides the system when soil moisture is adequate. Sensors are especially useful if the system cannot be monitored and adjusted regularly.





Mulched beds conserve soil moisture and add design interest to this bed of viburnum and crown of thorns.

There are many different types of controllers on the market. Make sure you get one with the features you need. When managed properly, an automatic controller can pay for itself in reduced water usage, cost and labor.

HANDWATERING IS NOT JUST FOR NEWLY PLANTED ORNAMENTAL PLANTS. It is also an effective and efficient way of applying water to selected plants that show signs of stress during dry periods. The direct application of water to the base of the plant, provided it is applied slowly enough to be absorbed by the soil, uses less water and is more efficient than sprinkler irrigation.

KNOW WHEN AND HOW TO IRRIGATE TURFGRASS. Turf under water stress will appear a dull bluish green color, the leaf blades will roll inward, and footprints will remain on the grass after walking over an area.

Under optimum growing conditions (high water-use zone), turfgrasses use 1 to 1 1/2 inches of water per week during hot, dry weather. It is usually best to divide this amount into two applications per week applying 1/2 to 3/4 inch each time. Never apply more than 1/2 to 3/4 inch at a time as this will likely result in runoff or deep percolation below the root zone. In the

winter season when temperatures are cooler, it is usually adequate to irrigate only once per week or less.

NEVER WATER GRASS DAILY EXCEPT DURING ESTABLISHMENT. Daily irrigation with a small amount of water encourages a shallow root system and reduced drought tolerance as shown in figure 5. Since roots generally grow where the soil is moist, a shallow root system also prevents efficient uptake of plant nutrients. Shallow, frequent irrigation increases evaporative water loss from the soil.

Use Mulch – Step 6

Mulching is one of the most beneficial landscape practices. Mulches conserve moisture by preventing evaporative water loss from the soil surface and reducing the need for supplemental irrigation during periods of limited rainfall. By maintaining an even moisture supply in the soil, mulches prevent fluctuations in soil moisture that can damage roots.

Mulches also prevent crusting of the soil surface and allow water to penetrate readily to plant roots. They insulate the roots of plants from summer heat and winter cold and help control weeds that compete with plants for moisture. By serving as a barrier between the plant and soil, mulches help discourage soil-borne diseases that stress plants and cause them to have a higher demand for water.

Islands of mulch beds designed to blend with the landscape are an economical way to retrofit an existing landscape by reducing water needs and maintenance requirements. Aside from occasional weed control and topdressing with additional mulch, unplanted mulched areas require no water and little routine maintenance.

Pine straw, melaleuca mulch, recycled yard waste and shredded hardwood mulch or chips are some of the best mulches for a waterwise landscape. These fine-textured mulches hold moisture in the soil better than coarse-textured mulches like large-nugget pine bark. They also are non-matting and allow water, nutrients and oxygen to freely penetrate to plant roots.

Inorganic mulches, on the other hand, such as rock, gravel and marble absorb and re-radiate heat

from the sun and increase water loss from plants and soil. *Table 1* compares commonly used mulches on the market today. Cypress mulch is not recommended in order to protect natural cypress wetlands.

Apply approximately 3 inches of mulch under ornamental plants in the landscape. Avoid applying too much mulch because it encourages shallow roots that are easily damaged by excessive cold, heat or drought.

Where possible, extend the mulched area two to three times beyond the canopy spread of ornamental trees and shrubs. Research shows that the roots of ornamental plants grow far beyond the canopy spread, so it is important to mulch as large an area as practical.

Once mulch is in place, use your hand to pull it back 2 to 3 inches away from the trunk of trees and shrubs. Keeping mulch away from the trunk will help prevent wood rotting diseases.

During periods of limited rainfall, make certain sufficient mulch is maintained beneath plants. If watering restrictions prevent you from irrigating, mulches will help conserve the soil's remaining moisture.

Newspapers placed under organic mulches improve water conservation in the soil and provide effective recycling. Place them on the soil surface under organic mulch at planting time.

Perform Proper Maintenance – Step 7

A Xeriscape landscape is a low-maintenance landscape. By working smarter, not harder, in the landscape, you'll save time, energy and water without sacrificing the beauty of the environment.



Figure 5 The healthy, deep-rooted grass on the left results from proper irrigation. The weak, shallow-rooted grass on the right results from light, frequent irrigation.

FERTILIZE LESS AND USE SLOW-RELEASE FERTILIZERS.

Many common commercial fertilizers are known by their analysis number, such as 16-4-8, 10-10-10 or 6-6-6. A complete fertilizer contains nitrogen, phosphorus and potassium. The numbers indicate the percentage of each of these nutrients. A 16-4-8 grade, for example, contains 16 percent nitrogen, 4 percent available phosphorus, and 8 percent soluble potassium. Purchase a fertilizer with nitrogen in slow-release form. Slow-release type fertilizers last longer by releasing nutrients gradually, in some cases for an entire season with one application. Also, they do not leach from the soil or wash away in runoff as readily as all-purpose fertilizers.

COMMONLY USED MULCHES

MULCH	SOURCE	DURABILITY	SUBSIDENCE	HIGH IN NUTRIENTS	MAINTAINS PH	MAINTAINS COLOR
eucalyptus	plantations	poor	good	poor	good	poor
melaleuca	degraded wetlands	good	good	poor	good	good
pine bark	by-product	good	good	poor	good	fair
pine straw	pine plantations	good	poor	fair	poor	poor
recycled	various	good	fair	good	good	good
cypress	Not recommended in order to protect natural cypress wetlands.					

Table 1 Attributes of suggested mulches



Always check the application rate on the label. The label usually suggests an application rate for optimum growth. This application rate is ideal for newly planted ornamental plants and turfgrasses to encourage healthy new growth and plant establishment. However, once plants are established, the recommended application rate of fertilizer can be reduced without sacrificing quality or appearance. This reduction in application rate is particularly important before and during dry periods. A good rule of thumb on established plants is to cut in half the rate recommended on the package.

Leaving grass clippings on turfgrass at each mowing supplies the grass with recycled nutrients and reduces the need for supplemental fertilizer. This does not promote thatch (a spongy condition of the turf). Thatch results from an accumulation of grass stems, shoots and roots, not clippings. By leaving cuttings on your lawn, as much as one-third of the nutrients applied to your lawn can be recycled.

TURFGRASS	MOWING HEIGHT (inches)
Centipede	1 to 1.5
Bermuda	1 to 2
Hybrid Bermuda	0.5 to 1.5
St. Augustine	2 to 3

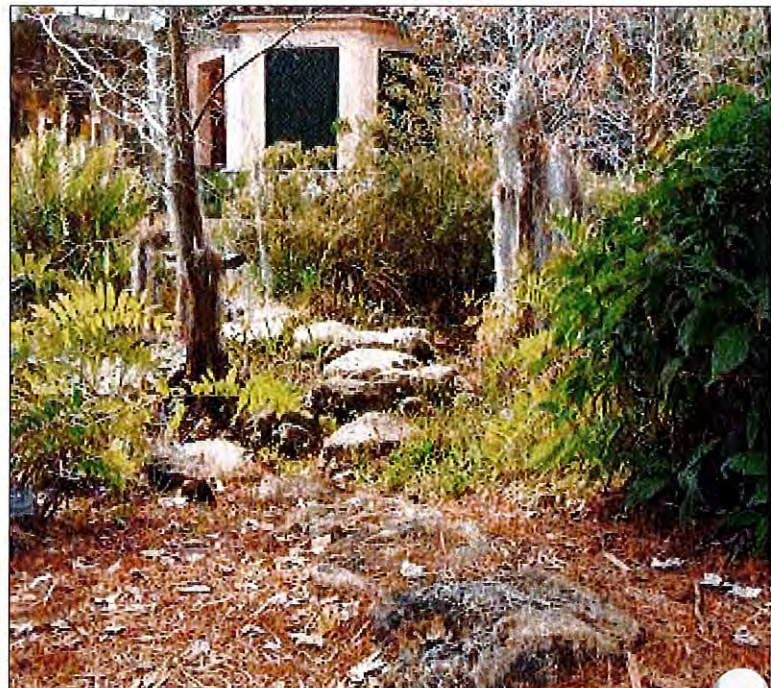
Table 2 Mowing heights for turfgrasses

PROPER MOWING SAVES WATER. Mow at the recommended height (*table 2*). Keep blade sharp and mow often enough so that no more than one-third of the leaf blade is removed at each mowing. Research shows that raising the mower blade during dry weather and cutting the grass higher encourages deeper rooting, increases turf survival during drought and reduces water demand.

Avoid scalping and stressing the grass and make certain mower blade is sharp at all times.

PRUNING. If a plant is placed in the right location and given enough room to mature, pruning should be minimal. Prune to retain the natural shape, or structure, of trees and shrubs and to promote or maintain strong structure. Less pruning is usually better because pruning is stressful to a tree or shrub, which causes it to require more water. Also, pruning at the wrong time of the year can stress plants.

Your County Cooperative Extension Service has information on how and when to make proper pruning cuts for each type of plant.



PLANTS NOT RECOMMENDED FOR LANDSCAPING

The problem with invasive, exotic plants is that they spread from managed landscapes into Florida's natural areas. These plants crowd out native plants and stress the habitats that support Florida's threatened and endangered species of plants and animals. Melaleuca, Brazilian peppertree, water hyacinth and kudzu are well known pests that cost the state millions of dollars annually to control. Not as well known are some ornamental plants that also spread into Florida's waterways, parks and natural areas.

This guide includes a list of plants not recommended for landscaping because they have shown their abilities to invade natural areas. The list is maintained by the Florida Exotic Pest Plant Council (FLEPPC), an organization comprised of professional botanists, environmental scientists, park rangers and land managers. The list is updated every two years based on observations and documented records of pest plants' spread and reproduction in Florida's natural areas. It is posted at the FLEPPC web site (www.fleppc.org). Some of the plants on the FLEPPC list are prohibited from possession, sale or cultivation by federal, state or local laws.

The South Florida Water Management District, along with other agencies, battles invasive plants in waters and lands managed for the protection of public resources. The District encourages the public to learn about the problems posed by these plants and use this knowledge to wisely choose landscape plants. The District does not recommend the use of invasive plants for landscaping.

ARE ALL NON-NATIVE PLANTS BAD FOR OUR ENVIRONMENT?

No. In fact, most non-native plants used in our Florida landscapes do not spread into the environment. While more than 10,000 non-native plants are estimated to have been purposely or accidentally brought into Florida, only 1,200 have

survived outside cultivation. And, of those, only 63 species are currently thought to be invading and disrupting native plant communities. This is less than one percent of all introduced plants.

SO WHICH PLANTS ARE OK?

Some of the plants on the FLEPPC list are still commercially available. Some are already prohibited from propagation by federal or state laws, and others are under review and may or may not be prohibited in the future. Talk to your local extension agent and conduct your own research in making your decisions.

The nursery industry offers alternative plants and non-invasive varieties of some of the species known to spread into natural areas. Availability of these plants is noted in this plant guide where applicable and known.

COULD SOME PLANTS CAUSE PROBLEMS FOR NATURAL AREAS IN THE FUTURE?

Only extensive research should guide legal prohibition of any plant. Consideration may include both ecological and economic impacts. The fact that some plants may become invasive only in certain habitats or regions adds to the complexity of this issue. Consensus regarding the invasiveness of plants produced by Florida's nursery growers is sought through ongoing dialogues between the plant industry, regulators, academia and natural areas managers.

Information on distribution of plants found in Florida may be found at the University of South Florida Center for Systematic Botany web site—<http://www.plantatlas.usf.edu/>. Because plant distributions and our understanding of their impacts may change over time, the information in the above web site and the FLEPPC most invasive plants list are updated periodically. The information provided here was updated in 2003. Be sure to check for the most current information.

FLORIDA EXOTIC PEST PLANT COUNCIL 2003 LIST OF CATEGORY I (MOST INVASIVE) SPECIES

Scientific Name	Common Name	Government List	Regional Distribution
<i>Abrus precatorius</i>	rosary pea		C, S
<i>Acacia auriculiformis</i>	earleaf acacia		S
<i>Albizia julibrissin</i>	mimosa, silk tree		N, C
<i>Albizia lebbek</i>	woman's tongue		C, S
<i>Ardisia crenata</i> (= <i>A. crenulata</i>)	coral ardisia		N, C
<i>Ardisia elliptica</i> (= <i>A. humilis</i>)	shoebutton ardisia		S
<i>Asparagus densiflorus</i>	asparagus-fern		C, S
<i>Bauhinia variegata</i>	orchid tree		C, S
<i>Bischofia javanica</i>	bischofia		C, S
<i>Calophyllum antillanum</i> (= <i>C. calaba</i> ; <i>C. inophyllum</i> misapplied)	santa maria, mastwood, Alexandrian laurel		S
<i>Casuarina equisetifolia</i>	Australian pine	P	N, C, S
<i>Casuarina glauca</i>	suckering Australian pine	P	C, S
<i>Cinnamomum camphora</i>	camphor-tree		N, C, S
<i>Colocasia esculenta</i>	wild taro		N, C, S
<i>Colubrina asiatica</i>	lather leaf		S
<i>Cupaniopsis anacardioides</i>	carrotwood	N	C, S
<i>Dioscorea alata</i>	winged yam	N	N, C, S
<i>Dioscorea bulbifera</i>	air-potato	N	N, C, S
<i>Eichhornia crassipes</i>	water-hyacinth	P	N, C, S
<i>Eugenia uniflora</i>	Surinam cherry		C, S
<i>Ficus microcarpa</i> (<i>F. nitida</i> and <i>F. retusa</i> var. <i>nitida</i> misapplied)	laurel fig		C, S
<i>Hydrilla verticillata</i>	hydrilla	P, U	N, C, S
<i>Hygrophila polysperma</i>	green hygro	P, U	N, C, S
<i>Hymenachne amplexicaulis</i>	West Indian marsh grass		C, S
<i>Imperata cylindrica</i> (<i>I. brasiliensis</i> misapplied)	cogon grass	N, U	N, C, S
<i>Ipomoea aquatica</i>	waterspinach	P, U	C, S
<i>Jasminum dichotomum</i>	Gold Coast jasmine		C, S
<i>Jasminum fluminense</i>	Brazilian jasmine		C, S
<i>Lantana camara</i>	lantana, shrub verben		N, C, S
<i>Ligustrum lucidum</i>	glossy privet		N, C
<i>Ligustrum sinense</i>	Chinese privet, hedge privet		N, C, S
<i>Lonicera japonica</i>	Japanese honeysuckle		N, C, S
<i>Lygodium japonicum</i>	Japanese climbing fern	N	N, C, S
<i>Lygodium microphyllum</i>	Old World climbing fern	N	C, S
<i>Macfadyena unguis-cati</i>	cat's claw vine		N, C, S
<i>Manilkara zapota</i>	sapodilla		S
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	P, N, U	C, S
<i>Melia azedarach</i>	Chinaberry		N, C, S
<i>Mimosa pigra</i>	catclaw mimosa	P, N, U	C, S
<i>Nandina domestica</i>	nandina, heavenly bamboo		N, C
<i>Nephrolepis cordifolia</i>	sword fern		N, C, S
<i>Nephrolepis multiflora</i>	Asian sword fern		C, S
<i>Neyraudia reynaudiana</i>	Burma reed; cane grass	N	S
<i>Paederia cruddasiana</i>	sewer vine, onion vine	N	S
<i>Paederia foetida</i>	skunk vine	N	N, C, S
<i>Panicum repens</i>	torpedo grass		N, C, S

FLORIDA EXOTIC PEST PLANT COUNCIL 2003 LIST OF CATEGORY I (MOST INVASIVE) SPECIES

Scientific Name	Common Name	Government List	Regional Distribution
<i>Pennisetum purpureum</i>	Napier grass		C, S
<i>Pistia stratiotes</i>	water lettuce	P	N, C, S
<i>Psidium cattleianum</i> (<i>P. littorale</i>)	strawberry guava		C, S
<i>Psidium guajava</i>	guava		C, S
<i>Pueraria montana</i> (= <i>P. lobata</i>)	kudzu	N, U	N, C, S
<i>Rhodomyrtus tomentosa</i>	downy rose-myrtle	N	C, S
<i>Rhoeo spathacea</i> (see <i>Tradescantia spathacea</i>)			
<i>Ruellia brittoniana</i>	Mexican petunia		N, C, S
<i>Sapium sebiferum</i>	popcorn tree, Chinese tallow tree	N	N, C, S
<i>Scaevola sericea</i> (= <i>Scaevola taccada</i> var. <i>sericea</i> , <i>S. frutescens</i>)	scaevola, half-flower, beach naupaka		C, S
<i>Schefflera actinophylla</i> (= <i>Brassaia actinophylla</i>)	schefflera, Queensland umbrella tree		C, S
<i>Schinus terebinthifolius</i>	Brazilian pepper	P, N	N, C, S
<i>Senna pendula</i> (= <i>Cassia coluteoides</i>)	climbing cassia, Christmas cassia, Christmas senna		C, S
<i>Solanum tampicense</i> (= <i>S. houstonii</i>)	wetland night shade, aquatic soda apple	N, U	C, S
<i>Solanum viarum</i>	tropical soda apple	N, U	N, C, S
<i>Syngonium podophyllum</i>	arrowhead vine		C, S
<i>Syzygium cumini</i>	jambolan, Java plum		C, S
<i>Tectaria incisa</i>	incised halberd fern		S
<i>Thespesia populnea</i>	seaside mahoe		C, S
<i>Tradescantia fluminensis</i>	white-flowered wandering jew		N, C
<i>Tradescantia spathacea</i> (= <i>Rhoeo spathacea</i> , <i>Rhoeo discolor</i>)	oyster plant		S
<i>Urochloa mutica</i> (= <i>Brachiaria mutica</i>)	Pará grass		C, S

ABBREVIATIONS USED:

Government list:	Distribution:
P=Prohibited by Fla. DEP	N= North Florida
N=Noxious weed list of Florida Dept. of Agriculture and Consumer Services	C= Central Florida
U=Noxious weed list of U.S. Dept. of Agriculture	S= South Florida

PLANT IT SMART

Incorporating non-invasive plants and Xeriscape principles into your landscape is easy and doesn't require a large investment. By following these recommendations, you can soon turn your yard into a thriving, waterwise landscape. But, most importantly, you can help protect our environment today—and for generations to come—by conserving our most valuable resource, water, and using plants that encourage rather than threaten natural Florida.

On the following pages, you'll find lists, photos and descriptions of dozens of indigenous trees, shrubs, groundcovers including flowers and grasses, and vines

that can be used in your waterwise Florida landscape.

Please do not plant non-indigenous, invasive plants such as Australian pine, melaleuca or water hyacinth. When non-indigenous and invasive plants escape they become biological invaders wreaking havoc on the environment. The environmental and economic harm caused by exotics is staggering, especially in South Florida where our tropical environment encourages plants to quickly disperse into new areas. As a result, our natural areas suffer from encroaching invasive plants that not only drive out native plants and animals, but can also affect water flow in the Everglades and the regional canal system.

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (ft.) H x W	Growth Rate	Plant Type	Comments
NATIVE FLORIDA SPECIES								
Acacia, Sweet <i>Acacia farnesiana</i>	8a-11	Low	H	Full Sun	20'x20'	Slow	Evergreen	Small flowering tree with fine leaves lending airy appearance. Produces showy, fragrant, yellow flowers intermittently all year. Thorny branches provide good nesting sites for birds.
Ash, Pop <i>Fraxinus caroliniana</i>	8a-10a	Medium	L	Full Sun	40'x25'	Medium	Deciduous	Large shade tree, often multi-trunked, with an open crown giving filtered light. Best suited for wet sites. Fruit attracts birds.
Birch, River <i>Betula nigra</i>	8a-9a	Medium	L	Full Sun	40'x30'	Medium	Deciduous	Shade or specimen tree, often multi-trunked, with exfoliating reddish-brown bark. Best in wet areas not prone to prolonged flooding, but can adapt to more upland sites.
Blackgum <i>Nyssa sylvatica</i>	8a-9a	Medium	L	Partial Sun	60'x30'	Medium	Deciduous	Large specimen or shade tree with brilliant red fall color. Best suited for rich moist sites, but will tolerate most planting conditions. Fruits ripen in the fall and attract wildlife.
Blolly <i>Guapira discolor</i>	9b-11	Low	H	Full Sun	30'x40'	Medium	Evergreen	Small shade or accent tree with smooth gray bark and attractive leaves. Well suited for coastal locations. Produces red fruits in summer through fall that attract birds.
Buttonwood <i>Conocarpus erectus</i>	10a-11	Low	H	Full Sun	35'x25'	Medium	Evergreen	Medium-sized specimen tree with interesting multi-trunks and open canopies. High salt, wind and drought tolerances make this an excellent choice for coastal planting sites.
Cedar, Southern Red <i>Juniper virginiana</i> = <i>Juniperus silicicola</i>	8a-9b	Low	H	Full Sun	35'x25'	Medium	Conifer	Medium-sized specimen or buffer tree with a pyramidal or columnar shape. Dense, somewhat fragrant foliage and fleshy purple fruits utilized by a variety of songbirds. Long lived.
Cherry Laurel <i>Prunus caroliniana</i>	8a-9b	Medium	M	Partial Sun	25'x15'	Medium	Evergreen	Small background, screening or specimen tree that prefers a fertile well-drained soil. Excellent food source for birds and wildlife. Poisonous to livestock and humans.
Common Persimmon <i>Diospyros virginiana</i>	8a-10a	Medium	L	Partial Sun	50'x30'	Medium	Deciduous	Large specimen or shade tree with thick, showy bark, and is very adaptable to a variety of growing conditions. Large fleshy, edible fruit attract birds and wildlife. Fall color.
Crabwood <i>Gymnanthes lucida</i>	10a-11	Low	M	Full Sun	20'x15'	Medium	Evergreen	A small densely branched screening or background tree with a compact, narrow growth habit making it suitable for planting sites between buildings. New growth is reddish.
Cypress, Bald <i>Taxodium distichum</i>	8a-11	Low	M	Partial Sun	80'x25'	Medium	Conifer	Large shade or specimen tree that prefers moist locations but will easily adapt to drier sites. Desirable foliage color all year with feathery looking leaves. The character rich trunk is highlighted by attractive exfoliating bark.
Cypress, Pond <i>Taxodium ascendens</i>	8b-11	Low	M, H	Partial Sun	75'x15'	Medium	Conifer	Large shade or specimen tree with a narrow pyramidal growth habit. Tiny needle-like leaves give tree an open wispy appearance. Prefers moist soils but will adapt to drier locations.
Dogwood, Flowering <i>Cornus florida</i>	8a-9a	Medium	L	Partial Sun	25'x25'	Medium	Deciduous	Small understory, shade or accent tree. Requires well drained, acidic soil rich in organic matter to ensure the production of showy white flowers in the spring. Excellent fall color. Brilliant red berries.
East Palatka Holly <i>Ilex x attenuata</i> 'East Palatka'	8a-9b	Medium	M	Partial Sun	30'x15'	Medium	Evergreen	Medium-sized specimen or screening tree with an open pyramidal form. Female trees produce bright red berries in late fall and winter, highly preferred by birds.
Elm, Florida <i>Ulmus americana</i> var. <i>floridana</i>	8a-10a	Medium	L	Partial Sun	60'x40'	Medium	Deciduous	Large upright, vase-shaped shade or background tree that prefers rich moist soils. Thick dark gray bark. Attractive fall foliage.
Fiddlewood <i>Citharexylum spinosum</i> = <i>Citharexylum fruticosum</i>	10a-11	Low	M	Partial Sun	20'x15'	Medium	Evergreen	Small flowering accent or screening tree with glossy leaves and fragrant tubular white flowers spring through fall. Trunk may be single or multi-stemmed. Attracts wildlife.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Acacia, Sweet
Acacia farnesianaBlolly
Guapira discolorCedar, Southern Red
Juniper virginianaCypress, Bald
Taxodium distichumDogwood, Flowering
Cornus floridaElm, Florida
Ulmus americana var. *floridana*Fiddlewood
Citharexylum fruticosum

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (FL) H x W	Growth Rate	Plant Type	Comments
Florida Soapberry <i>Sapindus saponaria</i> = <i>Sapindus marginatus</i>	8a-11	Low	H	Full Sun	25'x15'	Slow	Semi-deciduous	Small accent, shade or background tree with a round, densely branched canopy. Prefers well-drained soil. Essentially an indestructible pest-free plant.
Geiger Tree <i>Cordia sebestena</i>	10b-11	Low	H	Full Sun	25'x20'	Slow	Evergreen	Small flowering accent or shade tree with a round canopy and extremely showy orange flower clusters throughout the year. Often multi-trunked. Excellent plant for coastal sites.
Gumbo Limbo <i>Bursera simaruba</i>	9b-11	Low	H	Full Sun	40'x35'	Medium	Semi-deciduous	Versatile shade or specimen tree with a round open form. Interesting trunk shapes and attractive copper to green-colored peeling bark. Easily propagated by cuttings of any size.
Hercules' Club <i>Zanthoxylum clava-herculis</i>	8a-10b	Low	H	Full Sun	30'x15'	Slow	Deciduous	Small specimen tree with a round crown and interesting dark green compound leaves with tall clusters of greenish flowers. Stout prickles cover much of the plant.
Hickory, Mockernut <i>Carya tomentosa</i>	8a-9b	Low	L	Full Sun	60'x35'	Medium	Deciduous	Large specimen tree with a broadly rounded crown and round fruit with thick husks. Wildlife food source. Yellow autumn leaves.
Hickory, Pignut <i>Carya alba</i> = <i>Carya glabra</i>	8a-9a	Low	L	Full Sun	60'x40'	Medium	Deciduous	Large shade or specimen tree with compound leaflets, dense oval shaped crown and variable sized fruit. Attracts wildlife. Prefers well-drained sites. Excellent fall color.
Hickory, Scrub <i>Carya floridana</i>	9a-10a	Low	L	Full Sun	30'x15'	Slow	Deciduous	Small specimen or shade tree with compound leaflets and edible nuts utilized by wildlife. Excellent choice for dry sandy sites. Grows larger in fertile soils.
Holly, American <i>Ilex opaca</i>	8a-9b	Low	M	Partial Sun	40'x20'	Slow	Evergreen	Large specimen or screening tree with stiff, spiny leaves. Female trees produce bright red berries early fall through late spring, which are a major food source for birds. Prefers acid soils.
Holly, Dahoon <i>Ilex cassine</i>	8a-10b	Low	M	Partial Sun	25'x15'	Slow	Evergreen	Small specimen tree with an open irregular form. Prefers moist planting sites. Female trees produce colorful red berries in the fall and winter, which are a major food source for birds.
Holly, Yaupon <i>Ilex vomitoria</i>	8a-9b	Low	H	Partial Sun	20'x15'	Slow	Evergreen	Small bushy specimen tree with a densely branched crown and small glossy leaves. Female plants produce bright red berries in the fall that attract birds. Attractive whitish-gray trunk.
Hornbeam, American <i>Carpinus caroliniana</i>	8a-9a	Low	L	Partial Sun	25'x25'	Slow	Deciduous	Medium-sized, often multi-trunked shade tree with a dense oval canopy and showy bark. Excellent fall color. Tolerates wet sites. Also called Ironwood, given its very dense, hard wood.
Ironwood, Black <i>Krugiodendron ferreum</i>	10a-11	Low	M	Partial Sun	20'x10'	Slow	Evergreen	Small specimen or background tree with dense, glossy, dark green oval leaves and furrowed light gray bark. Fruit is attractive to birds. Heaviest wood of any American tree.
Jamaican Dogwood <i>Piscidia piscipula</i>	10b-11	Low	H	Partial Sun	45'x25'	Medium	Deciduous	Medium-sized flowering shade tree that produces somewhat showy white flowers marked with blue/purple/pink in the spring while the tree is leafless. Excellent plant for coastal areas.
Joewood <i>Jacquinia keyensis</i>	10a-11	Low	H	Partial Sun	15'x6'	Slow	Evergreen	Small flowering accent tree with densely branched canopy and dense foliage. Produces fragrant white flowers year round. Attractive blue-gray bark. Excellent plant for coastal areas. Extremely slow growing.
Lancewood <i>Ocotea coriacea</i>	10b-11	Low	L	Full Sun	25'x25'	Slow	Evergreen	Small short-lived specimen tree with a densely branched, broad oval or rounded crown and dark green glossy lance shaped leaves. Best suited for rich moist sites.
Lignum Vitae <i>Guaicum sanctum</i>	10b-11	Low	H	Partial Sun	15'x15'	Slow	Evergreen	Small flowering tree with a dense foliage and attractive gnarled, white bark. Produces very showy blue flowers all year and colorful fruits in the fall.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Florida Soapberry
Sapindus saponariaGeiger Tree
Cordia sebestenaGumbo Limbo
Bursera simarubaHolly, Dahoon
Ilex cassineHolly, Yaupon
Ilex vomitoriaJoewood
Jacquinia keyensisLancewood
Ocotea coriaceaLignum Vitae
Guaicum sanctum

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (PL) H x W	Growth Rate	Plant Type	Comments
Loblolly Bay <i>Gordonia lasianthus</i>	8a-9b	Low	L	Partial Sun	40'x15'	Slow	Evergreen	Upright flowering tree with a uniform columnar form. Produces showy, white, fragrant flowers in the spring and summer. Prefers moist to seasonally wet, organic, rich growing conditions.
Magnolia, Southern <i>Magnolia grandiflora</i>	8a-10a	Low	M	Partial Sun	80'x40'	Slow	Evergreen	Large flowering shade tree with large glossy, dark green leaves, showy, fragrant white flowers in the spring and summer. Tolerant of most growing conditions, but prefers wet sites.
Mahogany <i>Swietenia mahagoni</i>	10a-11	Low	M	Partial Sun	50'x40'	Medium	Evergreen	Large shade or specimen tree with a densely leafy canopy. Tolerant of most growing conditions except wet sites. Web worms and weak branches can be a problem.
Mangrove, Black <i>Avicennia germinans</i>	9b-11	Low	H	Full Sun	30'x25'	Slow	Evergreen	Medium-sized shade, background or screening tree that grows in brackish water sites, but can adapt to dryer locations. Excellent plant for coastal areas. Valuable wildlife plant. Protected.
Mangrove, Red <i>Rhizophora mangle</i>	9b-11	Low	H	Full Sun	30'x30'	Slow	Deciduous	Large background tree. Commonly found growing in salt or brackish water. Characterized by prop roots. Excellent plant for coastal areas. Valuable wildlife plant. Protected.
Mangrove, White <i>Laguncularia racemosa</i>	9b-11	Low	H	Full Sun	35'x30'	Slow	Evergreen	Medium-sized background or screen tree. Commonly used to help stabilize and hold soil near or in coastal areas. Valuable wildlife plant. Protected.
Maple, Red <i>Acer rubrum</i>	8a-10b	Low	L	Partial Sun	50'x30'	Medium	Deciduous	Versatile shade tree with outstanding fall color. In winter, males produce tiny red flowers, females produce winged fruit. Tolerates most growing conditions, but prefers moist sites.
Mastic <i>Sideroxylon foetidissimum</i> = <i>Mastichodendron foetidissimum</i>	9b-11	Low	M	Partial Sun	45'x30'	Slow	Evergreen	Large attractive shade tree with a single wind-resistant straight trunk, rounded crown and fragrant yellow flowers. Edible, gummy fruits attract wildlife. Pest free.
Mulberry, Red <i>Morus rubra</i>	8a-10a	Low	M	Full Sun	30'x25'	Medium	Deciduous	Medium-sized shade or background tree with large, rough-textured showy leaves and edible fruits in the spring. Fruits attract birds and wildlife, but may stain pavement. Cold tolerant.
Oak, Chapman <i>Quercus chapmanii</i>	9a-10a	Low	M	Full Sun	20'x10'	Slow	Deciduous, briefly	Small shade or background tree that produces tiny acorns, which are sought after by wildlife. Prefers sandy well-drained soils.
Oak, Laurel <i>Quercus laurifolia</i>	8a-10b	Low	L	Full Sun	80'x45'	Medium	Evergreen	Large fast-growing shade tree with a densely rounded crown when mature. Tolerant of most planting conditions, but dislikes alkaline soils. Acorns are a wildlife food source.
Oak, Live <i>Quercus virginiana</i>	8a-11	Low	H	Full Sun	60'x40'	Medium	Evergreen	Large shade tree with a broad spreading canopy and thick trunk. Wind resistant and long-lived. With age the tree will become wider than tall. Acorns provide food for wildlife and birds.
Oak, Sand Live <i>Quercus geminata</i>	8a-10b	Low	H	Partial Sun	40'x40'	Medium	Evergreen	Large shade or specimen tree with dense round canopy. A small version of live oak. Prefers well-drained soil. Leaves and acorns will stain cement but are a wildlife food source.
Oak, Turkey <i>Quercus laevis</i>	8a-9b	Low	M	Full Sun	50'x20'	Medium	Deciduous	Large shade or specimen tree with spreading branches and an open crown. Glossy irregularly shaped leaves. Best in dry, sandy areas. Acorns provide food for wildlife and birds.
Oak, Water <i>Quercus nigra</i>	8a-9b	Low	L	Full Sun	80'x50'	Medium	Evergreen	Large shade tree with round dense canopy. Prefers moist sites, but will tolerate slightly dryer conditions. Smooth, slightly furrowed bark. Acorns provide food for wildlife and birds.
Paradise Tree <i>Simarouba glauca</i>	9b-11	Low	M	Partial Sun	50'x30'	Medium	Evergreen	Large shade or specimen tree with attractive glossy green foliage and a broad rounded crown. Bright red new growth in spring and summer. Red fruits in summer attract birds.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Loblolly Bay
Gordonia lasianthusMagnolia, Southern
Magnolia grandifloraMahogany
Swietenia mahagoniMangrove, Red
Rhizophora mangleMaple, Red
Acer rubrumMastic
Sideroxylon foetidissimumOak, Live
Quercus virginianaParadise Tree
Simarouba glauca

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (Ft.) H x W	Growth Rate	Plant Type	Comments
Pigeon Plum <i>Coccoloba diversifolia</i>	10a-11	Low	H	Partial Sun	25'x20'	Fast	Evergreen	Small screening or specimen tree with a narrow upright growth habit and attractive peeling bark. Edible purple fruit in autumn attracts wildlife. Tolerant of urban planting sites.
Pine, Loblolly <i>Pinus taeda</i>	8a-9b	Low	L	Full Sun	100'x25'	Fast	Conifer	Large screening or shade tree with an open irregular canopy. Fastest-growing and tallest of the pines. Tolerant of most planting conditions, but prefers moist acid soils without groundwater irrigation. No tap root.
Pine, Long-leaf <i>Pinus palustris</i>	8a-9b	Low	L	Full Sun	70'x35'	Medium	Conifer	Large specimen or shade tree with an open irregular crown and long glossy drooping needles. Typically found in dry sandy areas, but tolerant of moist sites. Excellent wildlife food source.
Pine, Sand <i>Pinus clausa</i>	8a-10a	Low	H	Partial Sun	30'x20'	Fast	Conifer	Attractive shade or specimen tree with an open irregular canopy, and short dark-green needles. Prefers dry, well-drained sandy soils. Excellent wildlife food source. Somewhat short-lived.
Pine, Slash <i>Pinus elliotii</i>	8a-10a	Low	M	Full Sun	100'x30'	Fast	Conifer	Large background or shade tree with an open canopy and shiny dark green needles. Very sensitive to soil grade changes or compaction. Excellent wildlife food source.
Pine, South Florida Slash <i>Pinus elliotii</i> var. <i>densa</i>	10a-11	Low	M	Full Sun	90'x40'	Fast	Conifer	Large background or shade tree with dense clusters of dark green needles. Tolerates wide ranges of soils, but very sensitive to physical disturbances within the drip line. Excellent wildlife food source.
Pitch Apple <i>Cusia rosea</i>	10a-11	Low	H	Partial Sun	25'x20'	Medium	Evergreen	Small flowering specimen tree with dense, thick, leathery leaves and showy pink and white flowers in spring. Can form aerial roots. Excellent plant for coastal areas. Poisonous.
Plum, Flatwoods <i>Prunus umbellata</i>	8a-9b	Low	L	Partial Sun	20'x15'	Medium	Deciduous	Small flowering tree with an irregularly shaped canopy and white flowers appearing before foliage in spring. Crooked trunk and purple fruit. Prefers fertile and well-drained soils. Wildlife food source.
Pond Apple <i>Annona glabra</i>	10a-11	Medium	M	Full Sun	20'x15'	Medium	Semi-deciduous	Small specimen tree with dense upturned branches, glossy leaves, swollen trunk base with age and pithy, avocado-shaped fruits in the fall. Prefers swampy or aquatic sites, but can adapt to drier sites.
Red Bay <i>Persea borbonia</i>	8a-11	Low	H	Partial Sun	40'x30"	Medium	Evergreen	Large shade or specimen tree with a dense rounded crown. Fragrant leaves with a grayish white underside are commonly used in cooking. Dark purple fruit attracts birds.
Red Stopper <i>Eugenia rhombea</i>	10b-11	Low	M	Partial Sun	20'x10'	Medium	Evergreen	Small specimen or understory tree with attractive reddish brown bark. Single or multi-stemmed trunk. Small black berries provide excellent food for wildlife. New growth is red.
Redberry Stopper <i>Eugenia confusa</i>	10a-11	Low	H	Partial Sun	20'x10'	Medium	Evergreen	Small specimen or screening tree with glossy narrow-tipped leaves and attractive light-gray, peeling bark. Typically multi-stemmed. Small red fruits in fall attract birds.
Redbud <i>Cercis canadensis</i>	8a-9b	Low	L	Partial Sun	25'x20'	Medium	Deciduous	Small flowering accent or shade tree with an irregularly rounded crown. Showy rosy-pink flowers appear before foliage in spring. Typically found multi-trunked. Excellent yellow fall color.
Satinleaf <i>Chrysophyllum oliviforme</i>	10a-11	Low	M	Full Sun	30'x20'	Medium	Evergreen	Small-to-medium-sized specimen or shade tree with showy leaves, glossy green on top and bronzy satin below. Small, dark purple fruit attracts birds.
Seagrape <i>Coccoloba uvifera</i>	9b-11	Low	H	Partial Sun	30'x25'	Medium	Evergreen	Medium-sized shade or specimen tree with a broadly spreading canopy, large, leathery round leaves and peeling brown bark. Excellent for coastal areas. Edible fruit attracts wildlife.
Short Leaf Fig <i>Ficus citrifolia</i>	10b-11	Low	M	Full Sun	50'x40'	Fast	Evergreen	Large shade tree with a round spreading canopy. Considered somewhat better behaved than other Ficus species, but has an aggressive root system. Yellow to red fruits attract birds.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Pigeon Plum
Coccoloba diversifoliaPine, Slash
Pinus elliotii

24

Pitch Apple
Cusia roseaPond Apple
Annona glabraRed Bay
Persea borboniaRedbud
Cercis canadensisSatinleaf
Chrysophyllum oliviforme

25

Seagrape
Coccoloba uvifera

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (Ft.) H x W	Growth Rate	Plant Type	Comments
Silver Buttonwood <i>Conocarpus erectus</i> var. <i>sericeus</i>	8a-11	Low	H	Full Sun	25'x20'	Slow	Evergreen	Medium-sized specimen or screening tree with a spreading vase shaped crown, silvery leaves and attractive bark. Typically multi-trunked. Excellent for coastal areas. Subject to sooty mold in shady, humid, frequent watering conditions.
Southern Catalpa <i>Catalpa bignonioides</i>	8b-9b	Low	L	Partial Sun	50'x40'	Medium	Deciduous	Large shade tree with an oval, irregularly shaped crown and thick trunk. Tolerant of most planting conditions, but prefers well-drained sites. Showy white flowers in fall.
Spanish Stopper <i>Eugenia foetida</i>	9b-11	Low	H	Partial Sun	15'x15'	Medium	Evergreen	Small specimen tree with an irregularly rounded crown and grayish-brown peeling bark. Small white, mildly fragrant flowers in summer and small black fruits in fall that attract birds.
Strangler Fig <i>Ficus aurea</i>	9b-11	Low	M	All	50'x50'	Medium	Evergreen	Large freestanding shade tree when mature, but commonly begins life as an epiphyte on cabbage palms. Large glossy dark green leaves and showy trunk. Excellent wildlife food source. Has an aggressive root system.
Sugarberry <i>Celtis laevigata</i>	8a-10b	Low	L	Partial Sun	50'x35'	Medium	Deciduous	Large shade tree with a round irregularly shaped canopy, drooping branches and a showy pale gray trunk. Black and red fruits attract wildlife. Yellow fall color. Tolerates extended flooding.
Summer Haw <i>Crataegus flava</i>	9a-9b	Low	L	Partial Sun	20'x10'	Medium	Deciduous	Small, thorny, multi-stemmed accent tree with fragrant white flowers in spring, bright red berries in winter and showy exfoliating bark all year. Prefers sandy well-drained soils.
Swamp Bay <i>Persea palustris</i>	8a-10b	Low	H	Partial Sun	35'x20'	Medium	Evergreen	Small shade or specimen tree with a dense, pyramid-shaped crown and aromatic leaves. Resembles red bay, but prefers moister sites and is more resistant to galls.
Swamp Tupelo <i>Nyssa sylvatica</i> var. <i>biflora</i>	8a-9b	High	L	Partial Sun	60'x25'	Medium	Deciduous	Large shade tree with a dense canopy and rough textured bark. Produces dark blue fruit that attract wildlife. Prefers rich moist to wet sites, but tolerates most planting soils.
Sweetbay <i>Magnolia virginiana</i>	8a-9b	High	L	Partial Sun	30'x15'	Medium	Evergreen	Small, narrow-cylindrically growing specimen tree. Dark green leaves with silvery undersides. Produces showy fragrant white flowers in summer and colorful red fruit in fall. Because of thin bark, tree should be protected from weed trimmers and mowers.
Sweetgum <i>Liquidambar styraciflua</i>	8a-9b	Low	L	Partial Sun	70'x40'	Medium	Deciduous	Large shade or background tree with glossy star-shaped leaves and brown prickly fruit balls in fall. Prefers moist wet acid soils, but will tolerate most conditions. Excellent red fall color.
Sycamore <i>Platanus occidentalis</i>	8a-9a	Low	M	Full Sun	90'x60'	Medium	Deciduous	Long-lived shade or screening tree with large leaves, a massive trunk and very attractive white peeling bark. Prefers moist sites, but adapts to drier conditions.
Tulip Tree <i>Liriodendron tulipifera</i>	8a-9a	High	L	Full Sun	90'x40'	Medium	Deciduous	Large shade or background tree with an oval-shaped canopy and a rough-barked very straight trunk. Produces fragrant yellow-green flowers in spring that attract bees. Yellow fall color.
Wild Dilly <i>Manilkara bahamensis</i>	10a-11	Low	H	Full Sun	25'x15'	Medium	Evergreen	Small specimen tree with dark green leathery leaves and edible fruit that attracts wildlife. The wood is very dense. Drooping clusters of yellow flowers in spring.
Wild Lime <i>Zanthoxylum fagara</i>	9b-11	Low	H	Partial Sun	15'x12'	Medium	Evergreen	Small barrier, background or screening tree with a broad densely branched crown. Typically multi-trunked with spiny branches. Tolerates most planting conditions. Butterfly larval food source.
Wild Tamarind <i>Lysiloma latifolium</i>	10b-11	Low	H	Partial Sun	40'x30'	Medium	Deciduous	Medium-sized shade or specimen tree with a weeping growth habit and delicate feather-like foliage. Produces small, white, fragrant flowers in spring and summer.
Willow, Bustin <i>Sideroxylon salicifolium</i> = <i>Dipholis salicifolia</i>	10a-11	Low	M	Partial Sun	30'x12'	Medium	Evergreen	Small specimen or shade tree with glossy dark green leaves and a narrow upright crown. Small, white fragrant flowers in spring. Small black berries are excellent wildlife food.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Silver Buttonwood
Conocarpus erectusStrangler Fig
Ficus aureaSugarberry
Celtis laevigataSweetbay
Magnolia virginiana

26

Sweetgum
Liquidambar styracifluaTulip Tree
Liriodendron tulipiferaWild Dilly
Manilkara bahamensisWild Lime
Zanthoxylum fagara

27

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (Ft.) H x W	Growth Rate	Plant Type	Comments
NON-NATIVE SPECIES								
African Tulip Tree <i>Spathodea campanulata</i>	10b-11	Low	M	Full Sun	55'x40'	Fast	Evergreen	Large flowering shade or specimen tree with an upright, irregular growth habit and large leaves. Produces large, showy orange and yellow flowers during winter and spring. Can be messy and may need pruning after freezes and windstorms. Drops leaves during drought.
Allspice <i>Pimenta dioica</i>	10b-11	Low	L	Full Sun	20'x15'	Medium	Evergreen	Small specimen tree with an open, branching structure and irregularly shaped canopy. Large leaves and small edible fruit smell like various spices. Attractive exfoliating bark. Clusters of small off-white flowers in spring.
Black Olive <i>Bucida buceras</i>	10a-11	Low	H	Full Sun	50'x40'	Medium	Evergreen	Large, spiny shade tree with a dense, irregular canopy. Tolerant of urban planting sites. Leaves can stain vehicles and pavement. Can be messy.
Bottlebrush <i>Callistemon spp.</i>	9a-11	Low	M	Full Sun	20'x10'	Medium	Evergreen	Small flowering specimen or accent tree, with showy red flowers in spring. Several species are available with varying growth habits.
Brazilian Beauty Leaf <i>Calophyllum brasiliense</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).							
Bridal Veil <i>Caesalpinia granadillo</i>	10b-11	Low	L	Full Sun	35'x25'	Medium	Evergreen	Medium-sized flowering shade or specimen tree with an irregular, vase-shaped canopy, frilly foliage and showy yellow flowers in summer and fall. Typically multi-trunked with attractive exfoliating bark. Numerous seed pods can be messy.
Bulnesia <i>Bulnesia arborea</i>	10a-11	Low	H	Full Sun	30'x25'	Medium	Evergreen	Medium-sized flowering shade or specimen tree with a rounded, dense canopy. Produces yellow-orange flowers all year, except winter. Typically multi-trunked.
Carrotwood <i>Cupaniopsis anacardioides</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).							
Crape Myrtle <i>Lagerstroemia indica</i>	8a-11	Low	M	Full Sun	25'x15'	Medium	Deciduous	Small flowering specimen or accent tree with showy flowers in spring and summer. Attractive light brown exfoliating bark. Many different varieties available.
Cuban Tamarind <i>Lysiloma sabicu</i>	10b-11	Low	H	Partial Sun	30'x25'	Medium	Deciduous	Small specimen or shade tree with a weeping growth habit and finely textured foliage, first emerging with reddish tips. Produces small yellow flowers in spring and summer. Numerous seed pods can be messy.
Dwarf Poinciana <i>Caesalpinia pulcherrima</i>	9-11	Low	M	Full Sun	15'x10'	Fast	Evergreen	Small flowering specimen or accent tree with a rounded irregular canopy, finely textured foliage and showy orange-yellow flowers in spring, summer and fall. Spiny and poisonous. Numerous seed pods can be messy.
Elm, Chinese <i>Ulmus parvifolia</i>	8a-10a	Low	L	Partial Sun	45'x30'	Medium	Semi-deciduous	Large specimen or shade tree with an irregularly vase-shaped canopy and weeping growth habit. Attractive light brown and gray exfoliating bark. Several different cultivars available. Copious fruit can be messy.
Fig, Cuban Laurel <i>Ficus microcarpa</i> = <i>F. retusa</i> 'nitida'	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).							
Fig, Fiddleleaf <i>Ficus lyrata</i>	10a-11	Low	M	Partial Sun	40'x30'	Medium	Evergreen	Medium-sized shade or specimen tree with a dense, irregularly shaped crown and large shiny green leaves that can be messy.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

African Tulip Tree
Spathodea campanulataAllspice
Pimenta dioicaBlack Olive
Bucida bucerasBottlebrush
Callistemon spp.Crape Myrtle
Lagerstroemia indicaDwarf Poinciana
Caesalpinia pulcherrimaFig, Fiddleleaf
Ficus lyrata

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (Ft.) H x W	Growth Rate	Plant Type	Comments
Fig, Rusty <i>Ficus rubiginosa</i>	10b-11	Low	M	Partial Sun	50'x40'	Slow	Evergreen	Large shade or specimen tree with a dense rounded canopy and dark green leaves with rusty pubescent undersides. Tolerant of most urban planting sites.
Floss Silk Tree <i>Chorisia speciosa</i>	10a-11	Low	H	Full Sun	40'x45'	Medium	Deciduous	Large flowering shade or specimen tree with an extremely spiny green trunk and showy pink flowers in fall. Tolerant of most planting conditions, but prefers well-drained sites.
Frangipani <i>Plumeria spp.</i>	10b-11	Low	M	Partial Sun	20'x20'	Slow	Deciduous	Small flowering specimen or accent tree with a rounded, open canopy, showy, fragrant red or white flowers, thick succulent stems and large oval leaves. Requires well-drained planting sites. Can be messy.
Fringe Flower, Chinese <i>Loropetalum chinense</i>	8a-10	Low	L	Partial Sun	15'x10'	Slow	Deciduous	Small tree with a loose open form and fine leaves. Prefers moist well-drained soils. Drought-tolerant once established. Red and white flowered forms, red forms are much showier. Drooping, strap-like flower petals arranged in clusters.
Glossy Privet <i>Ligustrum lucidum</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).							
Golden Rain Tree <i>Koelreuteria elegans</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).							
Golden Shower <i>Cassia fistula</i>	10-11	Low	M	Full Sun	40'x35'	Medium	Deciduous	Medium-sized flowering shade or specimen tree with an open irregular vase-shaped canopy. Produces showy yellow flowers in summer. Poisonous.
Hong Kong Orchid Tree <i>Bauhinia x 'blokeana'</i>	9b-11	Low	M	Partial Sun	30'x25'	Medium	Evergreen	Medium-sized flowering shade or specimen tree with an irregularly vase-shaped canopy. Produces showy pink-purple flowers all year. Produces no seeds, therefore, is not invasive or messy like other orchid trees. Somewhat weak-wooded.
Jaboticaba <i>Myrciaria cauliflora</i>	10b-11	Low	L	Partial Sun	20'x15'	Slow	Evergreen	Small specimen or accent tree with a profusely branched, dense rounded crown and attractive reddish flaking bark. Small edible fruits attached to trunk may be present all year. Tolerant of most planting soils.
Jacaranda <i>Jacaranda mimosifolia</i>	9b-11	Low	L	Full Sun	40'x50'	Medium	Deciduous	Large flowering shade tree with an irregularly vase-shaped canopy and very finely textured foliage. Produces showy, fragrant, lavender-blue flowers in spring and summer.
Japanese Privet <i>Ligustrum japonicum</i>	9-10b	Low	M	Partial Sun	15'x20'	Medium	Evergreen	Small specimen or shade tree with a dense rounded canopy, showy white pungent flowers and attractive bark. Black berries attract birds. Typically multi-trunked.
Jerusalem Thorn Tree <i>Parkinsonia aculeata</i>	8b-11	Low	H	Full Sun	20'x25'	Medium	Deciduous	Small flowering specimen tree with open, somewhat weeping growth habit. Produces yellow flowers in spring and summer. Typically multi-trunked and very spiny throughout.
Leyland Cypress <i>Cupressocyparis x 'leylandii'</i>	8a-10a	Low	M	Full Sun	45'x20'	Medium	Evergreen	Large specimen or screening tree with a dense very formal columnar growth habit and dark green to blue-green foliage. Tolerant of most well-drained soils.
Loquat <i>Eriobotrya japonica</i>	8a-11	Low	M	Full Sun	20'x15'	Medium	Evergreen	Small flowering shade or specimen tree with a dense round canopy and large dark green foliage. Produces fragrant white flowers in fall and winter and showy orange edible fruit.
Lychee <i>Litchi chinensis</i>	10a-11	Low	L	Full Sun	30'x25'	Medium	Evergreen	Small flowering shade or accent tree with a dense round canopy, glossy bright green foliage and showy yellow flowers in spring. Produces edible fruit in late spring and early summer.
Madagascar Olive <i>Noronia emarginata</i>	10b-11	Low	H	Full Sun	25'x20'	Medium	Evergreen	Small specimen tree with a dense irregular-shaped canopy and small fragrant yellow flowers in spring. Produces an edible fleshy yellow fruit. Excellent small tree for coastal areas.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Fig, Rusty
Ficus rubiginosaFrangipani
Plumeria spp.Fringe Flower, Chinese
Loropetalum chinenseHong Kong Orchid Tree
Bauhinia x 'blokeana'Jaboticaba
Myrciaria caulifloraJacaranda
Jacaranda mimosifoliaJerusalem Thorn Tree
Parkinsonia aculeataLoquat
Eriobotrya japonica

TREES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Mature Size (Ft.) H x W	Growth Rate	Plant Type	Comments
Orchid Tree <i>Bauhinia variegata</i>								INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).
Pink and White Shower <i>Cassia javanica</i>	10b-11	Low	M	Full Sun	40'x30'	Fast	Deciduous	Flowering shade or specimen tree with a wide spreading crown and pale green leaves. Produces showy red-pink flowers in spring and summer.
Pink Trumpet Tree <i>Tabebuia heterophylla</i>	10a-11	Low	M	Full Sun	50'x40'	Fast	Evergreen	Large flowering shade or specimen tree with a round canopy and showy pink flowers in spring. Tolerates most well-drained soils.
Plum Jambolan <i>Syzygium cumini</i>								INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).
Pongam <i>Pongamia pinnata</i>	10b-11	Low	H	Full Sun	40'x35'	Fast	Evergreen	Large flowering shade or specimen tree with a dense round crown and showy pink, white, lavender flowers in spring. Drooping branches are very wind resistant. Seeds profusely and may produce suckers.
Royal Poinciana <i>Delonix regia</i>	10a-11	Low	M	Full Sun	40'x50'	Fast	Deciduous	Large shade or specimen tree with a sprawling open canopy, fine textured foliage and showy red-orange flowers in summer. Tolerant of urban sites. Copious large seed pods can be messy.
Schefflera <i>Schefflera actinophylla</i>								INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).
Spiny Black Olive <i>Bucida molinetii</i> = <i>B. spinosa</i>	10b-11	Low	M	Partial Sun	20'x15'	Slow	Evergreen	Small shade or specimen tree with irregular and upright growth habit. A small, spiny cousin of the Black Olive with the same characteristics.
Tamarind <i>Tamarindus indica</i>	10a-11	Low	M	Full Sun	50'x45'	Fast	Evergreen	Large shade or specimen tree with a dense irregularly shaped canopy, fine textured foliage and attractive grayish-green bark. Extremely wind resistant.
Trumpet Tree <i>Tabebuia aurea</i> = <i>T. caraiba</i>	10a-11	Low	M	Full Sun	25'x15'	Fast	Deciduous	Flowering specimen or accent tree with a dense irregular shaped canopy, silver green foliage, attractive corky bark and showy bright yellow flowers in the spring.
Weeping Fig <i>Ficus benjamina</i>	10b-11	Low	M	Partial Sun	60'x90'	Fast	Evergreen	Large shade tree with a dense spreading canopy. Aggressive root system. Not recommended for planting close to structures or underground water pipes.
Weeping Podocarpus <i>Podocarpus gracilior</i>	10a-11	Low	M	Partial Sun	40'x30'	Fast	Evergreen	Large shade or specimen tree with dense weeping canopy, pendulous branching and fine textured linear foliage. Tolerant of urban planting sites.
Weeping Yaupon <i>Ilex vomitoria</i> 'Pendula'	8-9b	Low	H	Partial Sun	25'x10'	Fast	Evergreen	Small weeping shade, accent or specimen tree with an openly irregular form, upright weeping growth habit. Showy red fruits attract wildlife in fall, but are poisonous to humans.
Willow, Weeping <i>Salix babylonica</i>	8a-9b	Low	L	Full Sun	35'x30'	Fast	Deciduous	Medium-sized shade or specimen tree with a densely irregular shaped canopy and weeping growth habit. Prefers wet areas. Relatively short-lived.
Yellow Elder <i>Tecoma stans</i>	10b-11	Low	M	Full Sun	25'x15'	Fast	Evergreen	Small flowering accent tree with an irregularly shaped oval crown, showy yellow flowers year round. Commonly found multi-trunked. Must be trained into a tree form.
Ylang-Ylang <i>Cananga odorata</i>	10b-11	Low	L	Full Sun	40'x25'	Fast	Evergreen	Large specimen or background tree with a dense, irregularly shaped crown and pyramidal growth habit. Produces very fragrant yellow flowers all year, which are used to make Chanel No. 5 perfume. Somewhat weak-wooded.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Pink Trumpet Tree
Tabebuia heterophyllaPongam Tree
Pongamia pinnataRoyal Poinciana
Delonix regiaTamarind
Tamarindus indicaTrumpet Tree
Tabebuia aureaYellow Elder
Tecoma stansYlang-Ylang
Cananga odorata

PALM-LIKE

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Typical Height	Growth Rate	Comments
NATIVE FLORIDA SPECIES							
Buccaneer Palm <i>Pseudophoenix sargentii</i>	10b-11	Low	H	Partial Sun	10'	Slow	Small specimen or accent palm with a stout, ringed trunk, a canopy of 8-10 blue-green leaves and produces clusters of bright red fruits. Tolerance of salty winds, drought and a variety of soils makes this palm well suited for coastal plantings. Rare.
Cabbage Palm <i>Sabal palmetto</i>	8a-11	Low	H	Partial Sun	40'	Slow	Florida's state tree. Adaptable to various soil conditions and very wind resistant. The fruits, flowers and crown where moisture collects provide wildlife value. Some retain the old frond bases ("boots"), which provide attachment areas for epiphytic ferns.
Dwarf Palmetto <i>Sabal minor</i>	8a-10b	Low	M	Partial Sun	6'	Slow	Small, usually trunkless palm commonly used as an understory accent or specimen plant. Bluish-green to green foliage adds a distinctive tropical look to the landscape. Tolerant of varying site conditions.
Florida Royal Palm <i>Roystonea regia</i> = <i>R. elata</i>	10a-11	Medium	M	Full Sun	80'	Medium	These large stately palms shed heavy 10-foot fronds, which may present a hazard to structures or passersby. Site them in rich, moist soils where there is adequate space. Formerly held to be two species, Florida and Cuban Royal Palm.
Needle Palm <i>Rhapidophyllum hystrix</i>	8a-10b	Medium	M	Partial Sun	5'	Slow	This small trunkless specimen palm adds a tropical accent to the landscape. The fiber-matted crown contains sharp, needle-like fibers. It is usually found in the understory of rich hardwood forests.
Paurotis Palm <i>Acoelorrhaphe wrightii</i>	9b-11	Low	M	Partial Sun	20'	Slow	Spiny, multi-trunked palm, which eventually forms a large cluster in time. Also known as the Everglades palm, this accent palm prefers relatively moist soils. Manganese deficiency ("frizzle top") may develop in alkaline soils.
Saw Palmetto <i>Serenoa repens</i>	8a-11	Low	H	Partial Sun	6'	Slow	Widely adaptable and very durable, multi-trunked palm. Flowers attract many pollinating insects and its blue-black berries are used medicinally. Large specimens are difficult to transplant. Petioles (frond branches) are saw-toothed at margins.
Scrub Palmetto <i>Sabal etonia</i>	8a-10b	Low	M	Partial Sun	4'	Slow	Similar to the dwarf palmetto but occurs only in peninsular Florida on drier (scrub) soils. Rare.
Silver Palm <i>Coccothrinax argentata</i>	10b-11	Low	H	Partial Sun	10' often smaller	Slow	Small, slow-growing specimen palm with finely divided palmate leaves that have silvery undersides. Tolerant of alkaline soils and well suited for coastal locations. Dark fruits attractive to wildlife.
Thatch Palm, Florida <i>Thrinax radiata</i>	10b-11	Low	H	Partial Sun	20'	Slow	Tolerant of alkaline soils, and has no disease or pest problems. A small, durable, palm with glossy, fan-shaped fronds that is excellent for coastal locations. White fruits eaten by songbirds.
Thatch Palm, Key <i>Thrinax morrisii</i>	10b-11	Low	H	Partial Sun	20' often smaller	Slow	Similar to the Florida Thatch Palm except for a silvery underside of the fronds. Tolerant of high alkalinity and coastal conditions, it can also be grown inland where drainage is good (sandy soils).

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Buccaneer Palm
Pseudophoenix sargentii



Cabbage Palm
Sabal palmetto



Florida Royal Palm
Roystonea regia = *R. elata*



Paurotis Palm
Acoelorrhaphe wrightii



Saw Palmetto
Serenoa repens



Thatch Palm, Florida
Thrinax radiata

PALM-LIKE

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Typical Height	Growth Rate	Comments
NON-NATIVE SPECIES							
Alexandra Palm <i>Archontophoenix alexandrae</i>	10b-11	Low	L	Partial Sun	40'	Medium	Also known as King Alexander Palm, it makes a stately accent in the landscape. New leaves may be bronze color on young specimens. Performs best with supplemental irrigation during drought periods. It does not transplant well from field nurseries.
Areca Palm <i>Dypsis lutescens</i> = <i>Chrysalidocarpus lutescens</i>	10b-11	Low	M	Partial Sun	20'	Medium	Commonly used as a multi-trunked specimen or screening palm. Its foliage suffers on poor soils but with fertilization the leaflets will be medium-green contrasting with a yellowish leaf stem. Spreads aggressively, plant where there is adequate space.
Arikury Palm <i>Syagrus schizophylla</i>	10a-11	Low	M	Partial Sun	15'	Medium	A relatively small specimen palm that prefers partial shade. It is adaptable in its soil requirements. The frond bases (petioles) are spiny.
Bamboo Palm <i>Chamaedorea erumpens</i>	10b-11	Low	L	Shade	10'	Medium	Slender, solitary bamboo-like palm with small (18-20 inches long) fronds. Adaptable in its soil requirements. Useful as an understory shrub in a tropical garden or as an indoor foliage plant. Its fruit is mildly irritating.
Bird-of-Paradise, White <i>Strelitzia reginae</i>	9a-11	Low	M	Partial Sun	20'	Medium	Large banana-like leaves are subject to splitting by the wind. An attractive multi-trunked large accent plant that provides a tropical look to the landscape. Produces showy flowers that are purple and white.
Bismarck Palm <i>Bismarckia nobilis</i>	10a-11	Low	M	Partial Sun	30'-60'	Medium	A massive fan palm with large silver blue leaves that adapts well to Florida conditions, but is out-of scale for small residential yards. Slow to form a trunk, its growth rate increases towards moderate after trunk development.
Canary Island Date Palm <i>Phoenix canariensis</i>	9a-11	Low	M	Partial Sun	40'	Medium	Large formal accent or specimen palm with a massive trunk. The lower third of the fronds bear long, sharp spines. Poorly drained sites should be avoided. Susceptible to lethal yellowing and magnesium deficiency.
Cardboard Palm <i>Zamia furfuracea</i>	10a-11	Low	H	Partial Sun	3'	Medium	A sturdy cycad with stiff, fern-like leaves that feel like cardboard. It may be used as a bold groundcover or as an accent shrub in sandy, well-drained soils. Red seeds held in cones by female plants are poisonous. Leaves heavily damaged at 28°F.
Cat Palm <i>Chamaedorea cataractarum</i>	10b-11	Low	L	Partial Sun	5'	Medium	A small virtually trunkless, palm with attractive foliage that forms a rounded clump. It is useful as a shrubby accent in a shaded garden. It has moderate drought tolerance in the shade.
Chinese Fan Palm <i>Livistona chinensis</i>	9a-11	Low	M	Partial Sun	25'	Medium	Hardy specimen plant with a wide-spreading crown and long drooping leaf tips. It is spiny and slightly susceptible to lethal yellowing. This hardy palm can handle a few degrees below freezing without damage. Other <i>Livistona</i> species are available.
Cliff Date Palm <i>Phoenix rupicola</i>	9-11	Low	M	Full Sun	25'	Medium	A graceful, moderately sized date palm that has bright green arching fronds with pinnate leaves that lie in one plane. The lower leaflets are modified into spines. It is adaptable to various soils.
Clustering Fishtail Palm <i>Caryota mitis</i>	10a-11	Low	L	Partial Sun	18'	Medium	The unusual leaf form of this multi-trunked palm makes it useful as a specimen plant. Its stems die after fruiting but are replaced by new clustering stems. Fruit contains irritating calcium oxalate crystals. Spreads aggressively, requiring adequate space.
Coconut Palm <i>Cocos nucifera</i>	10b-11	Low	H	Full Sun	60'	Medium	Coconut palms are the most economically important palm for use as food, thatch and coir fiber. The trees adapt well to exposed coastal locations and warm temperatures. The "Malayan" and "Maypan" varieties are resistant to the fatal lethal yellowing virus.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Areca Palm
Dypsis lutescensBamboo Palm
Chamaedorea erumpensCanary Island Date Palm
Phoenix canariensisCardboard Palm
Zamia furfuraceaCat Palm
Chamaedorea cataractarumChinese Fan Palm
Livistona chinensisClustering Fishtail Palm
Caryota mitisCoconut Palm
Cocos nucifera

PALM-LIKE

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Typical Height	Growth Rate	Comments
Cycad, Chamael, Dioon <i>Dioon edule</i>	8b-11	Low	M	Partial Sun	5'	Slow	This very slow-growing, long-lived cycad is used as a specimen plant for tropical effects. Its stiff, shiny, dark green leaflets are sharp. Tolerant of various soils and drought, it forms a trunk only after many years.
Edible Date Palm <i>Phoenix dactylifera</i>	8b-11	Low	H	Full Sun	70'	Slow	An adaptable landscape palm to various soils and conditions, but mildly susceptible to lethal yellowing disease. Foliage is gray-green and the lower leaflets are modified into sharp spines.
European Fan Palm <i>Chamaerops humilis</i>	8a-11	Medium	M	Full Sun	10'	Slow	This small fan palm is commonly used as a specimen or buffer plant, and is adaptable to various soils, but they must be well-drained. The frond stems are armed with orange spines. There is much variation in leaf color and habit among specimens.
Foxtail Palm <i>Wodyetia bifurcata</i>	10a-11	Medium	M	Partial Sun	30'	Medium	A popular, fast-growing specimen palm with dark green leaves with silvery undersides and a slender gray trunk that is ringed with leaf scars. It appears to be adaptable to various soil conditions.
Hurricane Palm <i>Dictyosperma album</i>	10b-11	Medium	M	Full Sun	30'	Medium	A spiny accent or specimen palm for tropical and subtropical landscapes. It is adaptable in its soil requirements, but drying winds can burn the foliage. It is moderately susceptible to lethal yellowing disease.
King Sago <i>Cycas revoluta</i>	8b-11	Low	L-M	Partial Sun	8'	Slow	This palm-like cycad has stiff dark green foliage and is used as an accent shrub. It is adaptable in its soil requirements but prone to micronutrient deficiencies. The leaves are somewhat spiny and its red fruits are poisonous. Prone to scale infestations.
Lady Palm <i>Rhapis excelsa</i>	9-11	Medium	M	Partial Sun	7'	Medium	Best suited for partial shade because its palmate leaves tend to yellow in sun. It forms dense clusters and can be used as an accent shrub or an interior plant. It is prone to iron deficiency and manganese deficiency in alkaline soils.
Licuala Palm <i>Licuala grandis</i>	10b-11	Medium	L	Partial Sun	8'	Slow	Small specimen palm that is a rainforest understory plant. It requires partial shade and protection of its unique corrugated, circular leaves from drying winds. It prefers a well-drained organic soil. The lower part of the frond branch contains hooked teeth.
Macarthur Palm <i>Ptychosperma macarthurii</i>	10b-11	Medium	L	Partial Sun	25'	Medium	A slender, multiple trunked palm that is adaptable to various soils and resistant to lethal yellowing. This clumping species has smaller leaves and thinner trunks than Solitaire Palm and may also be used for interiorscape. Its red fruits are an irritant.
Majesty Palm <i>Ravenea rivularis</i>	10a-11	Medium	M	Partial Sun	60'-80'	Medium	Adaptable specimen palm for understory planting locations. This palm quickly reaches 10 feet of height then slows in growth rate. Requires frequent fertilization or moderate shade to maintain healthy look. Widely used as an interior plant.
Montgomery Palm <i>Veitchia montgomeryana</i>	10b-11	Medium	M	Partial Sun	25'-35'	Medium	A small specimen palm that has a slender gray (green near the crownshaft) trunk and fronds that do not drop below a horizontal position. It is adaptable in its soil requirements and slightly susceptible to lethal yellowing.
Parlor Palm <i>Chamaedorea elegans</i>	10b-11	Medium	L	Partial Sun	6'	Slow	Parlor palm is a densely clustering trunked palm that is very popular as an indoor foliage plant and can be used as a small accent in low light outdoors. Its black fruits are an irritant and mites can be a problem at low relative humidity.
Pindo Palm <i>Butia capitata</i>	8a-10b	Low	M	Partial Sun	15'	Slow	Hardy specimen plant with stiff, blue-green pinnate leaves densely covering arching fronds, which also contain spines. Also called Jelly Palm for its edible fruits, it does best in Central and Northern Florida. Tolerant of various soils.
Ponytail Palm <i>Beaucarnea recurvata</i>	10a-11	Low	M	Full Sun	10'	Slow	Often erroneously called a palm, this small specimen tree has long, linear leaves and a large swollen base/trunk. Micronutrient deficiencies, however, are common with this plant.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

European Fan Palm
Chamaerops humilisFoxtail Palm
Wodyetia bifurcata

38

King Sago
Cycas revolutaLady Palm
Rhapis excelsaParlor Palm
Chamaedorea elegansPindo Palm
Butia capitataPonytail Palm
Beaucarnea recurvata

39

PALM-LIKE

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Typical Height	Growth Rate	Comments
Pygmy Date Palm <i>Phoenix roebelenii</i>	10a-11	Low	L	Partial Sun	10'	Slow	The Pygmy Date Palm is a popular, small accent palm with graceful, fine-textured fronds. It is subject to magnesium, manganese and potassium deficiencies and is armed with sharp spines on the petioles (frond bases).
Queen Palm <i>Syagrus romanzoffiana</i>	10a-11	Low	M	Partial Sun	40'	Medium	Widely planted specimen palm that has a smooth gray trunk and long arching fronds. Manganese deficiency ("frizzle-top") is frequently a problem, especially in alkaline soils, unless periodically fertilized. It produces copious fruits, which can be messy.
Queen Sago <i>Cycas circinalis</i>	10b-11	Low	M	Partial Sun	10'	Medium	Large cycad with dark green, spiny palm-like leaves that are much larger than those of the King Sago. It forms a visible trunk and can be used as a free-standing specimen in large areas. Produces red fruits that are poisonous. Prefers well drained soils.
Screw Pine <i>Pandanus utilis</i>	10b-11	Low	H	Full Sun	25'	Medium	Unusual tree with palm-like leaf clusters and prop-like roots. It is tolerant of various soils. It is slightly susceptible to lethal yellowing and the leaves are spiny. Its unusual fruits are edible and resemble a pineapple.
Senegal Date Palm <i>Phoenix reclinata</i>	9-11	Low	M	Full Sun	25'-30'	Medium	This multi-trunked specimen palm suckers vigorously and produces many stems. The lower leaves are modified into long, dagger-like spines. It is tolerant of various soils but requires sufficient room.
Solitaire Palm <i>Ptychosperma elegans</i>	10b-11	Low	L	Partial Sun	20'	Medium	Also known as Alexander Palm, this small, slender palm is commonly used as a specimen tree for interior space. It produces red fruits and is lethal yellowing resistant. It is adaptable to various soils but must be protected from cold winds.
Traveler's Palm <i>Ravenala madagascariensis</i>	10a-11	Low	L	Partial Sun	25'	Medium	Relative of the banana and bird of paradise, this striking plant has large, tropical-looking leaves arranged in one plane atop a stout trunk. It does best in fertile soil and is used as a free-standing specimen.
Triangle Palm <i>Neodypsis decaryi</i>	10b-11	Low	L	Partial Sun	25'	Medium	Unique blue-green leaves are arranged in three planes, creating a bold, formal appearance. It requires well-drained soil and regular fertilization on infertile soils. Drought tolerant once established, it is slightly susceptible to lethal yellowing.
Washington Palm <i>Washingtonia robusta</i>	8a-11	Low	M	Full Sun	80'	Medium	A very tall, slender and spiny fan palm that retains old leaves in a petticoat. Its leaves are damaged in the low 20s°F. This desert palm naturally lives near water but over-watering in humid areas can cause root and butt rot.
Wild Date Palm <i>Phoenix sylvestris</i>	9a-11	Low	M	Full Sun	40'	Medium	Also known as Toddy Palm or India Date Palm. It is adaptable in its soil requirements and like other large date palms, makes a durable specimen tree. The blue-green cast of the leaves is variable and the petiole is armed with spines.
Windmill Palm <i>Trachycarpus fortunei</i>	8a-10b	Low	M	Partial Sun	25'	Medium	This small specimen fan palm is one of the most cold and shade tolerant palms in cultivation. It will not thrive in hot, tropical conditions. The petioles are slightly spiny and has soft, disorganized brown fiber on the trunk. It prefers fertile soils.
Yucca, Spineless <i>Yucca elephantipes</i>	9b-11	Low	M	Partial Sun	20'	Medium	This is one of the few yuccas that has relatively soft leaf tips, unlike Spanish Bayonet which has very sharp, hard leaf tips. It is adaptable to various soils and commonly used as an accent. Variegated forms are also available.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Pygmy Date Palm
Phoenix roebeleniiQueen Sago
Cycas circinalisScrew Pine
Pandanus utilisTraveler's Palm
Ravenala madagascariensisTriangle Palm
Neodypsis decaryiWashington Palm
Washingtonia robustaWild Date Palm
Phoenix sylvestrisYucca, Spineless
Yucca elephantipes

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
NATIVE FLORIDA SPECIES										
Adam's Needle <i>Yucca filamentosa</i>	8a-9b	Low	H	Full Sun	Spring	White	5'	Slow	Evergreen	Flowering accent or specimen plant with rigid leaves that have filamentous edges and spiny tips. Flower stalks usually take several years to appear.
Apple, Seven-year <i>Genipa clusifolia</i> (= <i>Casasia clusifolia</i>)	10a-11	Low	H	Partial Sun	All Year	White	8'	Slow	Evergreen	Informal flowering hedge or buffer plant with shiny leaves, showy fragrant flowers and fruit that attracts wildlife. Excellent seaside plant.
Bahama Coffee <i>Psychotria ligustrifolia</i>	10b-11	Low	M	Partial Sun	Spring - Summer	White	4'	Medium	Evergreen	Informal hedge or foundation plant with very dark green glossy foliage. Red fruits are attractive to wildlife. Can form suckers.
Bay Cedar <i>Suriana maritima</i>	10b-11	Low	H	Full Sun	All Year	Yellow	10'	Slow	Evergreen	Round densely leafed accent or screening plant. Prefers dry sandy well-drained sites, but is tolerant of most site conditions. Excellent plant for coastal areas.
Beach Elder <i>Iva imbricata</i>	9-10b	Low	H	Full Sun	All Year	Green	3'	Medium	Herbaceous Perennial	Small multi-stemmed accent plant with fleshy leaves and suckering roots that help stabilize loose soils. Excellent for coastal areas. Inconspicuous flowers.
Beautyberry <i>Callicarpa americana</i>	8-11	Low	L	Partial Sun	Spring - Summer	Pink	4'-6'	Medium	Deciduous	Commonly used as an understory plant for added color. Brilliant display of bright purple berries that will attract birds year round. Flowers also attract butterflies.
Black Torch <i>Erithalis fruticosa</i>	10a-11	Low	H	Partial Sun	All Year	White	8'	Slow	Evergreen	Informal screen or privacy hedge with a dense rounded form when planted in full sun. Shiny black fruits are attractive to wildlife.
Blueberry, Shiny <i>Vaccinium myrsinites</i>	8a-11	Low	L	Partial Sun	Spring	White and Pink	2'	Slow	Evergreen Small Tree	Small accent or foundation plant that also is suitable for mass plantings. Small glossy leaves. Edible fruit that are attractive to wildlife. Spreads by runners.
Buckthorn, Tough <i>Sideroxylon tenax</i> (= <i>Bumelia tenax</i>)	8b-9b	Low	H	Full Sun	All Year	White	20'	Slow	Evergreen	Large barrier, background or screening plant with small leaves and large edible purple berries. Prefers well-drained sandy soils. Thorny.
Buttonbush <i>Cephalanthus occidentalis</i>	8a-10a	Low	L	Partial Sun	Summer	White	8'-12'	Medium	Deciduous	Excellent plant for poorly drained sites or around a lake or pond. The foliage is dark green and very shiny. The fragrant blooms attract butterflies and bees. Poisonous.
Caper, Jamaican <i>Capparis cynophallophora</i>	10b-11	Low	H	Full Sun	Spring	Pink and White	9'-16'	Slow	Evergreen	Popular flowering shrub or small tree with a uniform, shape and growth habit. Dark green glossy leaves with slightly rusty undersides. Showy, fragrant flowers.
Cassia, Bahama <i>Senna mexicana</i> var. <i>chapmanii</i>	10a	Low	L	Full Sun	Fall - Winter	Yellow	1'-3'	Medium	Evergreen	Dwarf accent plant that is suitable for mass plantings. The dark green foliage and the large showy flowers contrast nicely. Adds a tropical feel to the garden. Attracts butterflies.
Christmas Berry <i>Lycium carolinianum</i>	8a-11	Low	H	Partial Sun	Summer - Fall	White and Lavender	7'	Slow	Evergreen	Specimen or accent plant with fleshy, needle-like, grayish green foliage and bright red berries in winter. Grows naturally in salt marshes and salt flats.
Coral Bean <i>Erythrina herbacea</i>	8a-11	Low	H	Partial Sun	Spring	Red	15'	Medium	Deciduous	Flowering accent or barrier plant with elongated spikes of tubular flowers that attract hummingbirds. Colorful fruits split open in the fall to expose poisonous seeds.
Cotton, Wild <i>Gossypium hirsutum</i>	9-11	Low	H	Partial Sun	All Year	Yellow	6'-12'	Medium	Evergreen	Showy yellow flowers form seed pods filled with fluffy white to rusty cotton. State-listed as endangered in the wild. Occasional pruning will strengthen branches and improve root system.

WATERING NEEDS Low Medium High

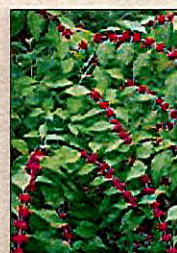
LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Apple, Seven-year
Genipa clusifoliaBahama Coffee
Psychotria ligustrifolia

42

Bay Cedar
Suriana maritimaBeautyberry
Callicarpa americanaButtonbush
Cephalanthus occidentalisCaper, Jamaican
Capparis cynophallophoraChristmas Berry
Lycium carolinianumCoral Bean
Erythrina herbacea

43

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Eastern Gamagrass <i>Tripsacum dactyloides</i>	8a-11	Low	M	Full Sun	Spring - Fall	Reddish- gold	4'-6'	Slow	Herbaceous Perennial	Large clump-forming accent or groundcover plant with dark green arching leaves. Prefers moist planting sites, but tolerates most planting conditions.
Elderberry <i>Sambucus canadensis</i>	8a-11	Medium	L	Full Sun	Summer	White	10'-15'	Medium	Deciduous	Large screening or barrier plant with glossy jagged edged leaves, fragrant flowers and black edible berries that attract wildlife. Typically multi-stemmed.
Firebush <i>Hamelia patens</i>	10a-11	Low	M	Partial Sun	All Year	Orange - Red	3'-10'	Medium	Evergreen	Flowering informal hedge, accent or specimen plant with red tinted pale green leaves and showy tubular flowers that attract hummingbirds.
Florida Flame Azalea <i>Rhododendron austrinum</i>	8a-9b	Medium	L	Partial Sun	Spring	Yellow - Orange	6'	Medium	Deciduous	Vase shaped medium textured specimen or mass planting with showy fragrant flowers that appear before the leaves in spring. Will not flower in deep shade.
Florida Gamagrass <i>Tripsacum floridanum</i>	10a-11	Low	M	Full Sun	Fall	Gold	2'	Slow	Herbaceous Perennial	Small dense clump-forming groundcover, with long, glossy light green leaves. Prefers damp rich soils, but is tolerant of most planting sites. Inconspicuous flowers.
Florida Privet <i>Forestiera segregata</i>	8a-10b	Low	H	Full Sun	Spring	Green	10'	Medium	Evergreen	Large fine-textured informal hedge or screening plant, with dense, small leaves and green to black fruit that attracts birds. Excellent plant for coastal areas.
Florida-Anise <i>Illicium floridanum</i>	8a-10a	Medium	L	Partial Sun	Spring	Red - Purple	8'-10'	Medium	Evergreen	Large screening or background plant with an upright growth habit, fragrant showy flowers and aromatic anise-scented leaves. Prefers wet sandy soils.
Gallberry <i>Ilex glabra</i>	8a-10a	Low	M	Partial Sun	Spring	White	6'-7'	Medium	Evergreen	Medium-sized screening, foundation or background plant with an open informal growth habit. Showy black fruit for birds in winter. Inconspicuous flowers. Produces suckers.
Green Cocoplum <i>Chrysobalanus icaco</i>	10b-11	Low	M	Partial Sun	All Year	White	12'-15'	Medium	Evergreen	Relatively pest-free plant that can be used as a formal or informal hedge with dense, ovoid glossy foliage. Edible purple fruits are attractive to wildlife. Inconspicuous flowers.
Holly, Dwarf Yaupon <i>Ilex vomitoria 'Nana'</i>	8a-10a	Low	H	Partial Sun	Spring - Summer	White	3'	Medium	Evergreen	Small compact groundcover with small dark green leaves and reddish new growth. Maintains a compact form when planted in full sun. Inconspicuous flowers. Poisonous.
Inkberry <i>Scoevola plumieri</i>	10a-11	Low	H	Full Sun	Summer	White	3'-5'	Medium	Evergreen	Sprawling groundcover with succulent glossy leaves and glossy black fruits. Excellent plant for coastal or dune areas. Rare.
Lyonia, Rusty <i>Lyonia ferruginea</i>	8a-10b	Low	L	Full Sun	Spring	White	10'-15'	Medium	Evergreen	Large screening, background plant or small tree with rusty pubescence on the leaf undersides and small, urn-shaped fragrant flowers. Prefers most acidic soil conditions.
Maidenbush <i>Savia bahamensis</i>	10b-11	Low	H	Partial Sun	Spring	Green	9'	Medium	Evergreen	Can be used as an informal hedge, background or screening plant. Tolerates most planting conditions. Excellent plant for coastal areas.
Marlberry <i>Ardisia escallonioides</i>	10a-11	Medium	H	Partial Sun	Spring - Fall	White	10'-20'	Medium	Evergreen	Understory plant commonly used to provide screening or background. Tolerates varying soil conditions. Fragrant flowers and black fruits are attractive to wildlife but poisonous to humans.
Myrsine <i>Rapanea punctata</i>	8b-11	Low	H	Partial Sun	All Year	White	15'	Medium	Evergreen	Shrubby upright growing specimen, screening plant or small tree with inconspicuous flowers and small black berries that attracts wildlife. Tolerates most planting conditions.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Eastern Gamagrass
Tripsacum dactyloides



Elderberry
Sambucus canadensis



Firebush
Hamelia patens



Gallberry
Ilex glabra



Green Cocoplum
Chrysobalanus icaco



Holly, Dwarf Yaupon
Ilex vomitoria 'Nana'



Marlberry
Ardisia escallonioides



Myrsine
Rapanea punctata

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Oakleaf Hydrangea <i>Hydrangea quercifolia</i>	8a-9b	Low	L	Partial Sun	Spring	White	5'-6'	Medium	Deciduous	Upright suckering plant commonly planted in mass or as a specimen plant. Showy flowers and exfoliating bark. Large oak-like leaves provide excellent fall color.
Pinxter Azalea <i>Rhododendron canescens</i>	8a-10a	Low	L	Partial Sun	Spring	Pink - White	10'	Medium	Deciduous	Large specimen or screening plant with a suckering growth habit and showy fragrant flowers. Requires an acid soil to perform well.
Possum Haw <i>Viburnum nudum</i>	9a-9b	Low	L	Partial Sun	Spring	White	6'-12'	Medium	Deciduous	Large background or screening plant with an open crown, masses of showy flowers, red fall foliage and small berries that attract wildlife.
Red Tip Cocoplum <i>Chrysobalanus icaco 'Red Tip'</i>	10a-11	Low	L	Partial Sun	All Year	White	12'-15'	Medium	Evergreen	Commonly used for hedges, screens or buffers. Edible purple fruits are attractive to wildlife. Dense burgundy red foliage persists year-round. Inconspicuous flowers.
Sea Lavender <i>Argusia gnaphalodes</i> (= <i>A. volubilis</i>)	9b-11	Low	H	Full Sun	Winter - Spring	White	3'-5'	Medium	Evergreen	Mounding specimen plant with distinctive silvery gray foliage. Prefers sandy well drained soils. Excellent plant for coastal areas. Endangered.
Silver Buttonwood <i>Conocarpus erectus var. sericeus</i>	10b-11	Low	H	Full Sun	All Year	Purple - White	20' -25'	Medium	Evergreen	Large screening, specimen plant or small tree with a vase shaped crown, silvery leaves and attractive bark. Excellent plant for coastal areas. Inconspicuous flowers.
Simpson Stopper <i>Myrcianthes fragrans</i>	9-11	Low	H	Partial Sun	All Year	White	8'-25'	Medium	Evergreen	Densely branched and leafy hedge or small tree with masses of fragrant white flowers and bright orange berries that attract birds. May bloom intermittently all year after weather extremes. When used as a hedge, frequent pruning limits flowering.
Softleaf Coffee <i>Psychotria sulzneri</i>	10-11	Low	M	Partial Sun	All Year	White	6-9'	Medium	Evergreen	Understory or specimen plant with dull gray-green foliage and attractive red berries that attract wildlife. Prefers deep shade.
Spanish Bayonet <i>Yucca aloifolia</i>	8a-10b	Low	H	Full Sun	Spring	White	12'-14'	Medium	Evergreen	Upright clump-forming accent or security screening plant with dark green ridged leaves with sharp points and showy flowers. Prefers well-drained soils.
Spicewood <i>Calyptanthus pallens</i>	10b-11	Low	M	Partial Sun	Spring - Fall	White	15'-20'	Medium	Evergreen	Commonly used as a hedge or small tree with colorful fruit, and fragrant foliage, create interest year round. Attracts wildlife. Inconspicuous flowers.
Swamp Mallow <i>Hibiscus coccineus</i>	8a-10b	Low	L	Partial Sun	Spring - Summer	Red	5'-6'	Medium	Perennial	Large accent or specimen plant with an erect growth habit and showy flowers that attract hummingbirds. Prefers wet planting sites.
Sweetspire, Virginia <i>Itea virginica</i>	8a-11	Low	L	Partial Sun	Spring - Summer	White	4'-7'	Medium	Semi- evergreen	Small accent plant with tassels of tiny fragrant flowers and glossy dark green foliage that may turn reddish in color with cooler temperatures. May produce suckers.
Tetrazygia <i>Tetrazygia bicolor</i>	10-11	Low	L	Partial Sun	Spring - Summer	White	8'-10'	Medium	Evergreen	Flowering accent or specimen plant with glossy dark green leaves, showy flowers and black-blue berries that attract birds. Prefers well drained soils.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Red Tip Cocoplum
Chrysobalanus icaco 'Red Tip'Sea Lavender
Argusia gnaphalodesSilver Buttonwood
Conocarpus erectus var. sericeusSimpson Stopper
Myrcianthes fragransSpanish Bayonet
Yucca aloifoliaSwamp Mallow
Hibiscus coccineusTetrazygia
Tetrazygia bicolor

SHRUBS

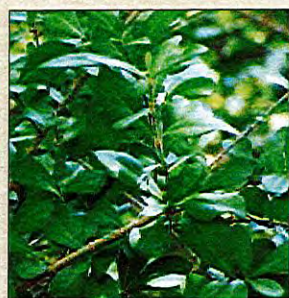
Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Tropical Sea Oxeye Daisy <i>Borreria arborescens</i>	10a-11	Low	H	Full Sun	All Year	Yellow	3'	Fast	Evergreen	Considered a spreading groundcover rather than a shrub. Prefers well-drained soils, which makes it well adapted for beach strands. Showy flowers.
Vamish Leaf <i>Dodonaea viscosa</i>	9a-11	Low	H	Partial Sun	Summer	White	6'	Medium	Evergreen	Large hardy accent, hedge or foundation plant with shiny leaves and showy winged fruit.
Walter's Viburnum <i>Viburnum obovatum</i>	8a-10a	Low	L	Partial Sun	Spring	White	12'-15'	Fast	Evergreen	Large formal or informal hedge with showy flowers and red to black edible berries that attract wildlife. May form thickets, which provide nesting habitat.
Wax Myrtle <i>Myrica cerifera</i>	8a-11	Low	H	Partial Sun	Spring - Summer	Green	20'	Medium	Evergreen	Large screening or specimen plant with fragrant leaves and waxy blue-green berries that attract wildlife. Typically multi-stemmed. Inconspicuous flowers.
White Indigo Berry <i>Randia aculeata</i>	10a-11	Low	H	Full Sun	All Year	White	8'	Medium	Evergreen	Hardy specimen or foundation plant with stiff somewhat spiny branches, small fragrant flowers and showy white berries on female plants.
Wild Coffee <i>Psychotria nervosa</i>	10a	Medium	M	Partial Sun	Spring - Summer	White	5'	Fast	Evergreen	Multi-stemmed screening or understory plant with glossy dark green leaves and bright red berries that attract wildlife. Excellent for shady locations.
Wild Olive <i>Osmanthus americanus</i>	8a-9b	Low	L	Partial Sun	Spring	White	15'	Medium	Evergreen	Large background or screening plant with showy fragrant flowers. Prefers a well drained moderately fertile soil.
Wild Rosemary <i>Conradina canescens</i>	9a-9b	Low	M	Full Sun	Spring - Fall	Pink	4'	Medium	Evergreen	Aromatic foliage. Flowers attract insects. Prefers well-drained sandy soil.
Wild Sage, Buttonsage <i>Lantana involucrata</i>	10a	Low	M	Partial Sun	All Year	White and Yellow	6'	Fast	Evergreen	Shrub with small coarse leaves. Will tolerate some shade. Flowers attractive to butterflies. Dark blue berry. Excellent specimen for coastal areas.
Yellow Anise <i>Illicium parviflorum</i>	9a-9b	Low	L	Partial Sun	Spring	Yellow	15'	Medium	Evergreen	Multi-stemmed hedge, screening plant or small tree with dense foliage, distinctive flowers and fragrant olive green foliage. Tolerates shady sites. Rare.
Yellow Necklace Pod <i>Sophora tomentosa</i> var. <i>truncata</i>	10a-11	Low	H	Partial Sun	All Year	Yellow	6'-8'	Fast	Evergreen	Loose-growing background or specimen plant with showy yellow flowers that attract butterflies and humming birds. Bean shaped seed pods are poisonous.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Walter's Viburnum
Viburnum obovatum



Wax Myrtle
Myrica cerifera



White Indigo Berry
Randia aculeata



Wild Coffee
Psychotria nervosa



Wild Sage, Buttonsage
Lantana involucrata



Yellow Necklace Pod
Sophora tomentosa var. *truncata*

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
NON-NATIVE SPECIES										
Alder, Yellow <i>Turnera ulmifolia</i>	9-11	Low	H	Full Sun	All Year	Yellow, White	2'-4'	Fast	Evergreen	Drought-tolerant, non-woody shrub. Showy flowers open only during mid-day. May be pinched back to increase fullness.
Alocasia, Elephant Ear <i>Alocasia spp.</i>	10b-11	High	L	Partial Sun	Summer	Green	2'-10'	Fast	Herbaceous Perennial	Irregular-shaped specimen or accent plant with large tropical-looking leaves. Many species and varieties with different characteristics are available. Poisonous.
Angel's Trumpet <i>Brugmansia x 'candida'</i>	8-10b	High	L	Full Sun	Spring - Summer	White, Pink, Yellow	8'-12'	Fast	Evergreen	Flowers are fragrant, showy inverted bells. Do not over water. May be propagated from cuttings. All parts of the plant are extremely poisonous.
Anise-Tree <i>Illicium anisatum</i>	8-10b	High	L	Full Sun	Spring	Yellow and Green	15'	Medium	Evergreen	Large screening or background plant with fragrant, upright, leathery, olive green anise-scented foliage. Relatively pest-free plant. Inconspicuous flowers.
Arbor-vitae, Oriental <i>Platycladus orientalis</i>	8-10b	High	L	Full Sun	N/A	N/A	20'	Medium	Evergreen Conifer	Large buffer or screening plant with a dense tightly compacted form and conical growth habit. Dark green foliage is arranged vertically. Inconspicuous flowers.
Azalea Hybrids <i>Rhododendron spp.</i>	8-10a	High	L	Partial Sun	Spring	White, Pink, Red, Purple	4'-6'	Medium	Evergreen	Showy understory, foundation or specimen plant with dark green foliage and a rounded or spreading form. Requires well-drained, mildly acidic soils. Many varieties available.
Barberry, 'Crimson Pygmy' <i>Berberis thunbergii, 'Atropurpurea Nana'</i>	8a-9a	High	M	Full Sun	Spring	Creamy White	3'-5'	Medium	Deciduous	Colorful barrier or accent plant with dense dark crimson foliage, thorny stems and colorful red-orange berries visible in the fall. Tolerates exposure.
Barberry, Wintergreen <i>Berberis julianae</i>	8-9b	High	M	Full Sun	Spring	Yellow	5'	Medium	Evergreen	Dense barrier or background plant with spiny dark green foliage, purplish when young or grown in full sun. Black-blue berries in the fall. Very spiny stems.
Beach Naupaka <i>Scaevola sericea</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Bird of Paradise <i>Strelitzia reginae</i>	9-11	High	M	Full Sun	Spring - Summer	Orange and Blue	5'-6'	Medium	Evergreen	Fan-like clump of long-stalked, blue-green leaves. Striking inflorescence suggests a bird in flight. Slow growing. Best in full sun and rich, moist soil. May be divided into new plants, which may not bloom for 7-10 years. Inconspicuous flowers; bracts provide long-lasting color.
Blue Porterweed <i>Stachytarpheta urticifolia</i>	9-11	High	H	Full Sun	All Year	Many	8'	Fast	Evergreen	Drought-tolerant, constant blooms attract butterflies. May spread by seed beyond garden beds. Small blue flowers grow along slender spikes at branch tips. May be damaged or killed by frost.
Bougainvillea, Paper Flower <i>Bougainvillea glabra</i>	10-11	High	H	Full Sun	All Year	Many	8'	Fast	Evergreen Vining	Colorful specimen or barrier plant with a dense wispy form when grown as a shrub. Inconspicuous flowers; persistent bracts provide intense color. Requires frequent pruning to maintain shrub form. Very thorny.
Butterfly-Bush <i>Buddleia davidii</i>	8-10b	High	M	Full Sun	Winter - Spring	White, Pink, Red, Purple	8'-10'	Medium	Evergreen	Large flowering accent or background plant with showy fragrant flower clusters that attract butterflies. Requires a hard pruning in the fall.
Caricature Plant <i>Graptophyllum pictum</i>	10b-11	High	L	Partial Sun	Spring - Fall	Red	5'	Fast	Evergreen	Upright accent or border plant, grown for its attractive pink and green foliage. Inconspicuous flowers. Suitable for coastal locations. Needs consistent moisture. Poisonous.
Catclaw Mimosa <i>Mimosa pigra</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Alder, Yellow
Turnera ulmifoliaAlocasia, Elephant Ear
Alocasia spp.Angel's Trumpet
Brugmansia x 'candida'Azalea Hybrids
Rhododendron spp.Bird of Paradise
Strelitzia reginaeBlue Porterweed
Stachytarpheta urticifoliaBougainvillea, Paper Flower
Bougainvillea glabraCaricature Plant
Graptophyllum pictum

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Century Plant, Maguey <i>Agave americana</i>	9a-11	Low	H	Full Sun	Summer - Fall	Yellow	6'-8'	Slow	Succulent Perennial	Spiny succulent commonly used as a specimen or in rock gardens. Blooms once and dies within 10 years, however, young plants arise from base. Many different cultivars available.
Chenille Plant <i>Acalypha hispida</i>	10b-11	Medium	L	Partial Sun	All Year	Red	5'	Fast	Evergreen	Crimson flower spikes up to 18 inches long are produced most of the year. Needs partial sun and regular moisture. May be propagated by cuttings. Mites, scale and mealybugs may be problems.
Chinese Privet <i>Ligustrum sinense</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Copperleaf <i>Acalypha wilkesiana</i>	10b-11	Medium	H	Full Sun	Spring - Fall	White	8'	Fast	Evergreen	Upright border or accent plant with dense, irregularly shaped bronze-copper colored foliage. Good seaside plant. Inconspicuous flowers.
Coral Ardisia <i>Ardisia crenata</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Crape Jasmine <i>Tabernaemontana divaricata</i>	10b-11	Medium	M	Partial Sun	Spring - Fall	White	8'	Medium	Evergreen	Flowering background or specimen plant with a dense round symmetrical form, shiny leaves and fragrant (especially at night), showy flowers.
Crinum Lily <i>Crinum asiaticum</i>	9-11	Medium	M	Full Sun	Spring - Summer	White	5'	Medium	Herbaceous Perennial	Large clump-forming specimen or accent plant with long fleshy light green leaves and showy fragrant flowers. Many cultivars available. Poisonous.
Croton <i>Codiaeum variegatum</i>	10a-11	Medium	M	Partial Sun	Summer	White	8'	Fast	Evergreen	Rounded irregularly shaped accent or specimen plant with colorful foliage. Inconspicuous flowers. Can become leggy over time. Many cultivars available.
Daisy, African Bush <i>Gamolepis chrysanthemoides</i>	10b-11	Medium	L	Full Sun	All Year	Yellow	3'	Medium	Evergreen	Low-growing rounded flowering shrub suitable for accent or mass plantings. Irregular leaf shape also adds interest. Becomes leggy with age.
Day Jessamine <i>Cestrum diurnum</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Downy Jasmine <i>Jasmine multiflorum</i>	10b-11	Medium	L	Partial Sun	Spring - Fall	White	4'-5'	Medium	Evergreen	Spreading, low-growing foundation or hedge plant that requires frequent pruning to maintain shrub form. Can also be trained on a trellis. Showy flowers.
Firecracker Plant <i>Ruellia equisetiformis</i>	10b-11	Medium	H	Full Sun	All Year	Red	4'-5'	Medium	Evergreen	Flowering vase-shaped specimen or accent plant with wispy almost leafless stems and long tubular flowers that attract butterflies. Excellent cascading plant. Spreading growth may be troublesome.
French Hydrangea <i>Hydrangea macrophylla</i>	8-9b	Medium	L	Partial Sun	Spring - Summer	Blue, Red, White, Lavender	5'	Fast	Deciduous	Round compact flowering shrub with coarse textured foliage and showy flowers that change color depending on the pH of the soil. Many cultivars available.
Gardenia <i>Gardenia augusta</i>	8a-10a	Medium	L	Full Sun	Spring	White	6'	Medium	Evergreen	Rounded specimen shrub with an open irregular growth habit, showy fragrant flowers, and dense shiny dark green foliage. Requires well drained soils. Many cultivars available.
Ginger, Shell <i>Alpinia zerumbet</i>	10a-11	Medium	M	Partial Sun	Summer - Winter	White, Yellow	8'	Fast	Herbaceous Perennial	Large clump-forming specimen or accent plant with dense, long, waxy dark green leaves that give a ginger odor when crushed and showy flowers clusters.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Century Plant, Maguey
Agave americana



Chenille Plant
Acalypha hispida



Copperleaf
Acalypha wilkesiana



Crinum Lily
Crinum asiaticum



Croton
Codiaeum variegatum



Downy Jasmine
Jasmine multiflorum



Gardenia
Gardenia augusta



Ginger, Shell
Alpinia zerumbet

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Glorybush <i>Tibouchina urvilleana</i>	9b-10b	Low	L	Full Sun	Spring - Fall	Purple	10'	Fast	Evergreen	Open irregularly shaped specimen shrub or small patio tree with pubescent dark green foliage and showy flowers. Prefers well-drained soils.
Golden Dewdrop <i>Duranta repens</i>	9b-11	Low	M	Full Sun	Spring - Fall	Blue, White	12'-14'	Medium	Evergreen	Flowering background plant with an upright form and showy flowers that attract butterflies. Tolerates most soil conditions. Yellow fruit is poisonous.
Green Pittosporum <i>Pittosporum tobira</i>	8-11	Low	H	Full Sun	Summer	White	6'-8'	Medium	Evergreen	Round, irregularly shaped hedge, foundation, or screening plant with glossy green leaves clustered at the tips of branches. Inconspicuous flowers.
Hawthorn, Indian <i>Raphiolepis indica</i>	8a-11	Low	M	Partial Sun	Spring	White, Pink	4'	Medium	Evergreen	Typically a low-growing accent shrub with an open irregular growth habit, showy flowers, ridged dark green foliage and small black berries present in the fall. Often declines in zones 9b-11.
Heliconia <i>Heliconia spp.</i>	10b-11	Low	L	Partial Sun	Spring- Summer	Red, Yellow	7'	Medium	Non-woody	Well-drained moist soils. Feed regularly with palm fertilizer. Cut spent flower canes to the ground. Every few years, divide clump when growth slows. Bracts provide long-lasting color. Flowers are inconspicuous.
Hibiscus <i>Hibiscus rosa-sinensis</i>	10a-11	Low	M	Full Sun	All Year	Many	8'-10'	Fast	Evergreen	Open upright specimen or screening plant with showy flowers and glossy green leaves. Tolerates most soil conditions. Many varieties exist. Commonly attracts white flies and aphids.
Holly, Burford or Chinese <i>Ilex cornuta 'Burford'</i>	8a-9b	Low	L	Partial Sun	Spring	White	8'-15'	Medium	Evergreen	Large dense screening or specimen plant with drooping branches, spiny dark green leaves, and red berries in the fall that attract wildlife. Inconspicuous flowers.
Holly, Japanese <i>Ilex crenata</i>	8-9b	Low	L	Partial Sun	Spring	White	8'-10'	Medium	Evergreen	Rounded hedge or background plant with dense foliage. Male and female plants necessary for berry production. Inconspicuous flowers. Many varieties available.
Honeysuckle, Cape <i>Tecomaria capensis</i>	10b-11	Low	M	Full Sun	Spring and Fall	Orange, Red, Yellow	6'-8'	Fast	Evergreen	Rambling plant with soft feathery foliage, tubular flower clusters, requires frequent pruning to retain shrub form. Will vine nicely on fence posts or trellis.
Juniper, Chinese <i>Juniperus chinensis</i>	8a-10b	Low	M	Full Sun	N/A	N/A	6'	Medium	Evergreen	Many different varieties and cultivars available with varied growth habits. Requires well-drained fertile soil. Cannot be pruned severely. Often declines in zones 9b-10.
King's Mantle <i>Thunbergia erecta</i>	10b-11	Low	M	Partial Sun	All Year	Purple	5'	Fast	Evergreen	Upright flowering specimen or hedge plant with showy flowers. Requires well-drained soils and frequent pruning to retain desired shape.
Littleleaf Boxwood <i>Buxus microphylla 'Japanica'</i>	8-10a	Low	L	Partial Sun	Summer	White	4'	Medium	Evergreen	Compact densely foliated formal hedge or foundation plant with stiff leathery medium green leaves. Many cultivars available. Inconspicuous flowers.
Nandina/Heavenly Bamboo <i>Nandina domestica</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Natal Plum <i>Carissa macrocarpa</i>	10b-11	Low	H	Partial Sun	Spring - Fall	White	10'	Medium	Evergreen	Round foundation or screening plant with dense branching and foliage, showy fragrant flowers, spiny stems and large red semi-edible fruit.
Night-Blooming Jessamine <i>Cestrum nocturnum</i>	10a-11	Low	M	Full Sun	Spring - Summer	White	10'	Medium	Evergreen	Sprawling specimen plant with showy fragrant flowers appearing only at night. Fragrance can be overpowering. White fruits and foliage are poisonous.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Glorybush
Tibouchina urvilleanaGreen Pittosporum
Pittosporum tobiraHawthorn, Indian
Raphiolepis indicaHeliconia
Heliconia spp.Hibiscus
Hibiscus rosa-sinensisJuniper, Chinese
Juniperus chinensisNatal Plum
Carissa macrocarpa

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Oleander <i>Nerium oleander</i>	8a-11	Low	H	Full Sun	All Year	White, Pink	15'	Slow	Evergreen	Upright multi-stemmed screening or barrier plan with showy flower clusters. Excellent plant for coastal areas. The entire plant is very poisonous.
Peregrina, Jatropha <i>Jatropha integerrima</i>	10b-11	Low	M	Full Sun	All Year	Red	8'	Slow	Evergreen	Flowering multi-trunk specimen or accent plant with a semi-compact shape and irregularly lobed leaves. Tolerant of most planting conditions. Poisonous.
Philodendron, Split Leaf <i>Philodendron selloum</i>	9-10	Low	L	Partial Sun	Summer	White	3'-5'	Slow	Herbaceous Perennial	Round accent, mass planting or foundation plant with a loose open form. Many cultivars with different characteristics available. Inconspicuous flowers.
Pineapple Guava <i>Feijoa sellowiana</i>	8b-10	Low	M	Partial Sun	Spring	White - Reddish	12'-14'	Slow	Evergreen	Flowering hedge, foundation, specimen plant or small tree with dense foliage, showy flowers and edible fruit. Leaves are gray-green with silvery undersides.
Plumbago <i>Plumbago auriculata</i>	10a-11	Low	M	Full Sun	Spring - Fall	Blue, White	5'	Medium	Evergreen	Sprawling foundation or hedge with dense foliage, showy flower clusters and soft pubescent leaves. Heavy surface shearing will revive the plant color.
Podocarpus, Yew <i>Podocarpus macrophyllus</i>	8a-11	Low	M	Partial Sun	N/A	N/A	35'	Slow	Conifer	Upright specimen, screening, framing plant or small tree with dense foliage and a narrow, symmetrical columnar growth habit. Tolerates most well-drained soils.
Poinciana, Dwarf <i>Caesalpinia pulcherrima</i>	9a-11	Low	M	Full Sun	Spring - Fall	Orange, Yellow, Red	9'	Medium	Evergreen	Upright loosely branched specimen, semi-screening plant or small tree with showy flowers and feathery light green leaves. Tolerates poor planting conditions. Poisonous.
Red Ixora <i>Ixora coccinea</i>	10b-11	Low	M	Full Sun	All Year	Yellow, Red, Pink	5'	Medium	Evergreen	Compact foundation, hedge or specimen shrub with dense foliage and showy flower clusters. Requires well-drained fertile soil. Many cultivars available.
Red Powderpuff <i>Calliandra haematocephala</i>	10a-11	Low	L	Full Sun	Winter	Red, White	15'	Medium	Evergreen	Round multi-trunked specimen shrub or small tree with showy flowers and attractive red fruit. Prefers sandy soils. Requires occasional shearing to maintain shape.
Rose <i>Rosa spp.</i>	8-10b	Low	L	Full Sun	All Year	Many	10'	Medium	Evergreen	Colorful specimen or group plantings with an upright or vining form depending on variety, thorny stems and fragrant flowers. Requires moist, well-drained soil.
Rose-of-Sharon <i>Hibiscus syriacus</i>	8-9b	Low	L	Full Sun	Summer - Fall	Many	10'	Medium	Deciduous	Upright, bushy specimen, accent or hedging plant with showy flowers and lustrous foliage. Prefers fertile well-drained soils. Blooms on new growth.
Sasanqua Camellia <i>Camellia sasanqua</i>	8-9b	Low	L	Full Sun	Fall	White, Pink, Red	15'	Medium	Evergreen	Upright hedge, screening, specimen plant or small tree with dense foliage, showy fragrant flowers and glossy dark green leaves. Prefers acid soils.
Schefflera, Dwarf <i>Schefflera arboricola</i>	10a-11	Low	M	Partial Sun	Summer	White	10'	Medium	Evergreen	Rounded multi-stemmed foundation or informal hedge with dense glossy leaves and flexible stems. Performs well in low light areas. Inconspicuous flowers.
Shoebuttan Ardisia <i>Ardisia elliptica</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Oleander
Nerium oleander



Peregrina, Jatropha
Jatropha integerrima



Plumbago
Plumbago auriculata



Podocarpus, Yew
Podocarpus macrophyllus



Red Ixora
Ixora coccinea



Red Powderpuff
Calliandra haematocephala



Rose
Rosa spp.



Schefflera, Dwarf
Schefflera arboricola

SHRUBS

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Snail Seed <i>Cocculus laurifolius</i>	9a-10b	Low	L	Partial Sun	Summer	Yellow	13'	Slow	Evergreen	Coarse textured barrier, screening or hedge plant with a weeping growth habit. Tiny flowers are inconspicuous. Poisonous leaves.
Snow Bush <i>Breynia disticha</i>	10b-11	Low	L	Partial Sun	Summer	White	6'	Slow	Evergreen	Rounded clump forming specimen or accent plant with fine textured variegated foliage and red berries. Requires pruning to deter weediness.
Strawberry Guava <i>Psidium cattleianum</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Surinam Cherry <i>Eugenia uniflora</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Sweet Olive <i>Osmanthus fragrans</i>	9a-9b	Low	L	Partial Sun	Fall - Winter	White	20'	Medium	Evergreen	Upright and rounded multi-trunked specimen plant with small, extremely fragrant flower clusters and deep green foliage. Prefers well-drained soils.
Texas Sage <i>Leucophyllum frutescens</i>	8a-10b	Low	M	Full Sun	Summer	Lavender	5'	Medium	Evergreen	Compact low hedge or specimen plant with showy bell shaped flowers and gray-green foliage. Requires well-drained sites. Full sun for best flowering.
Thyallis <i>Galphimia gracilis</i>	10b-11	Low	M	Partial Sun	Spring - Fall	Yellow	5'	Medium	Evergreen	Round compact specimen or border accent plant with showy flowers and light green foliage that turns bronze in the fall and winter. Brittle stems can be a problem.
Ti Plant <i>Cordyline terminalis</i>	10b-11	Low	M	Partial Sun	Fall	White	5'	Medium	Evergreen	Slender, upright single trunked accent or specimen plant with long narrow purple to pink leaves. Tolerates shady conditions. Many varieties available.
Tibouchina <i>Tibouchina clavata</i>	10b-11	Low	L	Full Sun	Spring - Fall	Purple	6'	Fast	Evergreen	Round specimen or border plant with an irregular growth habit, showy flowers and dark green pubescent leaves. Prefers well-drained soils.
Viburnum, Sandankwa <i>Viburnum suspensum</i>	8a-10b	Low	L	Partial Sun	Summer	White	6'	Medium	Evergreen	Compact foundation or hedge plant with dense leathery dark green leaves and small fragrant flower clusters. Tolerates shady locations.
Viburnum, Sweet <i>Viburnum odoratissimum</i>	8a-10b	Low	L	Partial Sun	Spring	White	8-10'	Medium	Evergreen	Dense, upright stoutly branched screening, foundation, hedge plant or small tree with large coarse dark green leaves and fragrant flowers. Tolerates shady locations.
Yesterday-Today-and-Tomorrow <i>Brumfelsia grandiflora</i>	10b-11	Low	M	Partial Sun	Spring - Fall	White, Purple, Blue	8'	Medium	Evergreen	Dense, upright multi-trunked specimen or foundation plant with showy fragrant flowers. Tolerates most planting conditions.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Snow Bush
Breynia distichaSweet Olive
Osmanthus fragransTexas Sage
Leucophyllum frutescensThyallis
Galphimia gracilisTi Plant
Cordyline terminalisViburnum, Sweet
Viburnum odoratissimumYesterday-Today-and-Tomorrow
Brumfelsia grandiflora

GROUNDCOVERS & GRASSES

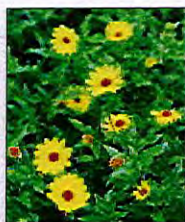
Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
NATIVE SPECIES										
Aster, Stokes <i>Stokesia laevis</i>	8-10	Low	M	Full Sun	Summer	Many	1'-2'	Medium	Perennial	Works well at the front of perennial borders. Requires acidic, well-drained soil. Cultivars come in a wide range of colors. Cold hardy.
Beach Morning Glory <i>Ipomoea imperati</i> (= <i>I. stolonifera</i>)	8-10b	Low	H	Full Sun	Spring - Fall	White	0.5'	Fast	Herbaceous	Works well as a groundcover. Likes well-drained, sandy soils. Showy flowering vine (non-climbing) for stabilizing beach dunes.
Beach Sunflower <i>Helianthus debilis</i>	8-10	Low	H	Full Sun	All Year	Yellow and Black	1'-2'	Medium	Annual	Showy flowers, extreme drought and salt tolerance. Although annual, profuse seeding causes colonies to persist well. Excellent groundcover needing no maintenance or irrigation.
Bitter Panicgrass <i>Panicum amarum</i>	8a-11	Low	H	Full Sun	All Year	Green	3.5'	Medium	Ornamental Grass	Coastal; good for stabilizing dunes. Well to excessively drained, moderately coarse-textured and coarse-textured soils. Bluish leaves.
Black-eyed Susan <i>Rudbeckia hirta</i>	8a-10	Low	L	Partial Sun	Spring - Fall	Yellow and Black	3'	Medium	Perennial	Works well in wild gardens, flowerbeds or as a border. Likes rich, well-drained soils. Popular as a cut flower. Not damaged by root-knot nematodes.
Blanket Flower <i>Gaillardia pulchella</i>	8a-11	Low	H	Full Sun	All Year	Red, Orange, Yellow	2'	Medium	Annual/ Perennial	Works well as border or bedding plant. Requires a well-drained soil. Flower has great variation in color. Few insect problems. Re-seeds readily.
Blue Flag Iris <i>Iris hexagona</i>	8a-10a	Low	L	Partial Sun	Spring	Blue, Purple	4'	Medium	Perennial	Use as accent plant in wet areas. Large plant size not suitable for small gardens. Needs moist to wet soil. Striking flower. Also called Dixie or Prairie Iris.
Blue Porterweed <i>Stachytarpheta jamaicensis</i>	9b-11	Low	H	Full Sun	All Year	Blue, Purple	2'	Medium	Perennial	Use as groundcover or in wildflower garden. Likes well-drained soils. Flowers open in morning. Asian import, <i>S. urticifolia</i> has an upright habit.
Blue-eyed Grass <i>Sisyrinchium angustifolium</i>	8a-11	Low	L	Full Sun	Spring	Blue, Purple	1'	Medium	Perennial	Use at front edge of flowerbed. Will tolerate dry conditions, but likes moist soils. Lovely blue wildflower adds diversity and spring color to lawns.
Butterfly Weed <i>Asclepias tuberosa</i>	8a-10	Low	M	Partial Sun	Spring - Fall	Orange	2'	Medium	Perennial	Plant in mixed borders or in wild gardens. Prefers well-drained, sandy soils. Also known as pleurisy root. Sap is not milky.
Cardinal Flower <i>Lobelia cardinalis</i>	8a-9b	Low	L	Partial Sun	Summer - Fall	Red	6'	Medium	Perennial	Use at edge of pond or water garden or in low, wet areas. Requires moist soils. Stalks of intensely red flowers. Hummingbird-pollinated.
Cinnamon Fern <i>Osmunda cinnamomea</i>	8a-10	Low	L	Partial Sun	N/A	N/A	4'	Medium	Fern	Use in massed borders or as accent plant. Requires moist, acidic soil. Should not let site dry out. "Bloom" is cinnamon-colored spike.
Climbing Aster <i>Aster carolinianus</i> = <i>Symphotrichum carolinianum</i>	8a-11	Low	L	Partial Sun	Summer - Winter	Pink - Lavender	10'	Medium	Perennial	Best in informal garden due to sprawling, vine-like growth habit. Prefers wet soils. Cut back severely after flowering for vigorous, full growth.
Common Tickseed <i>Coreopsis leavenworthii</i>	8a-11	Low	L	Full Sun	All Year	Yellow	5'	Medium	Perennial	Nice in wildflower garden. Likes moist, sandy soils. Yellow petals with brown centers. Creates brilliant masses of yellow blooms in spring.
Dotted Horsemint <i>Monarda punctata</i>	8a-10a	Low	H	Partial Sun	Spring - Fall	Yellow, Lavender	4'	Medium	Perennial	Use in informal wildflower garden or in the back of border areas. Likes well-drained soil. Purple-spotted yellow flower with large lavender bracts.
Giant Leather Fern <i>Acrostichum danaeifolium</i>	8b-11	Low	H	Partial Sun	N/A	N/A	8'	Medium	Fern	Specimen plant for wet areas. Requires moist to wet soils. Huge leaves. Needs large area to grow to full potential.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Aster, Stokes
Stokesia laevisBeach Sunflower
Helianthus debilisBlanket Flower
Gaillardia pulchellaBlue-eyed Grass
Sisyrinchium angustifoliumButterfly Weed
Asclepias tuberosaClimbing Aster
Aster carolinianusCommon Tickseed
Coreopsis leavenworthiiGiant Leather Fern
Acrostichum danaeifolium

GROUNDCOVERS & GRASSES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Giant Sword Fern <i>Nephrolepis biserrata</i>	10b-11	Low	L	Partial Sun	N/A	N/A	4'	Slow	Fern	Can be used as a dense groundcover in shady, moist areas. Prefers moist, sandy soils. Fronds grow from 3.5 to 4 feet long.
Golden Creeper <i>Ernodea littoralis</i>	9b-11	Low	H	Full Sun	All Year	White,	2'	Slow	Semi-woody Evergreen	Good choice for oceanfront gardens and as groundcover in dry areas. Needs dry, well-drained soils. Small flowers, dark green leaves. Rare plant.
Gopher Apple <i>Licania michauxii</i>	8a-11	Low	H	Full Sun	Spring - Summer	Yellow, Green	1'	Slow	Woody Evergreen	Good choice for coastal landscapes. Thrives in very well drained sandy soils. Underground shrub that pokes its leaves, edible fruits and flowers above ground. Gopher tortoise food.
Green Eyes <i>Berlandiera subacaulis</i>	8b-10	Low	L	Partial Sun	All Year	Yellow	1.5'	Medium	Perennial	Nice addition to wildflower garden. Likes sandy or rocky, well-drained soils. Greenish-yellow central disk flower. Native only to Florida.
Iris, Virginia <i>Iris virginica</i>	8a-9b	Medium	L	Partial Sun	Spring	Blue, Purple	4'	Medium	Perennial	Use as accent plant in wet areas or in water garden. Needs a moist to wet soil. Large, striking flower. Also called Virginia Iris.
Lizard's Tail <i>Saururus cernuus</i>	8a-10b	Medium	L	Partial Sun	Spring - Fall	White	3'	Medium	Annual	Use in wet areas and water gardens. Likes moist to wet soils. Nodding spikes of white flowers. Forms extensive colonies by spreading rhizomes.
Lopsided Indiangrass <i>Sorghastrum secundum</i>	8a-11	Low	M	Partial Sun	Summer - Fall	Gold - Brown	4'	Medium	Ornamental Grass	Use in informal garden. Well suited for acidic soils. Produces tall attractive spikes towards end of summer to fall.
Muhly Grass <i>Muhlenbergia capillaris</i>	8a-11	Low	H	Partial Sun	Fall - Winter	Purple	1'-3'	Medium	Ornamental Grass	Wonderful accent plant. Grows nearly symmetrical. Creates cover for wildlife. Mixes well with wildflowers. Lovely purple plumes in fall.
Paint Brush <i>Carpheophorus corymbosus</i>	8a-11	Low	L	Full Sun	Summer - Fall	Purple	3'-4'	Medium	Perennial	Blends well in butterfly or wildflower gardens. Often found in pinelands. Does best in acid soils.
Quailberry <i>Crossopetalum ilicifolium</i>	10b-11	Low	L	Partial Sun	All Year	White	1'-2'	Medium	Semi-woody Evergreen	Attractive holly-like leaves with inconspicuous flowers and persistent red berries. Excellent for use around and beneath trees, but not in deep shade. Threatened species that thrives in well-drained soils.
Powderpuff <i>Mimosa strigillosa</i>	8a-10a	Low	L	Full Sun	Spring - Summer	Pink	0.5'	Medium	Perennial	Carpeting groundcover with fern-like leaves sensitive to touch. Adds color to lawns. Can be mowed. Flowers resemble pink puffballs. Very drought-tolerant once established.
Prickly Pear Cactus <i>Opuntia humifusa</i>	8a-11	Low	H	Full Sun	Spring	Yellow	4'	Slow	Succulent	Specimen or accent plant with showy flowers; spines and glochids. Host of cochineal insects used to make red dye. Edible fruit, also feeds gopher tortoise.
Purple Coneflower <i>Echinacea purpurea</i>	8a-9b	Low	M	Full Sun	Summer - Fall	Reddish- purple	2'	Medium	Perennial	Clumping plant. Prefers well-drained soils. Long lasting cut flowers. Used medicinally. Needs little care. Handles heat well.
Purple Lovegrass <i>Eragrostis spectabilis</i>	8a-9b	Low	L	Full Sun	Summer - Fall	Purple	2.5'	Medium	Ornamental Grass	Finely textured accent plant with purple plumes in the fall. Likes dry areas with alkaline soil. Cover for small birds. Ideal to plant with drought-tolerant wildflowers.
Railroad Vine <i>Ipomoea pes-caprae</i>	9a-11	Low	H	Full Sun	All Year	Pink - Lavender	0.5'	Medium	Vine	A creeping, flowering vine. Normally of beaches and coastal dunes. Large rosy pink flowers, open only in morning. Needs sun. Sap may cause dermatitis.
Rain Lily <i>Zephyranthes atamasco</i>	8a-9b	Low	H	Partial Sun	Winter - Summer	White, Pink	1'	Medium	Perennial	Wonderful in mass plantings. Prefers moist, not soggy rich soil. Grass-like foliage. Blooms after rains during warm seasons. Short-lived flowers.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Giant Sword Fern
Nephrolepis biserrataMuhly Grass
Muhlenbergia capillarisQuailberry
Crossopetalum ilicifoliumPowderpuff
Mimosa strigillosaPrickly Pear Cactus
Opuntia humifusaPurple Coneflower
Echinacea purpureaRailroad Vine
Ipomoea pes-capraeRain Lily
Zephyranthes atamasco

GROUNDCOVERS & GRASSES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Royal Fern <i>Osmunda regalis</i>	8a-10b	Low	L	Partial Sun	N/A	N/A	5'	Slow	Fern	Showy elegant specimen fern. Requires damp moist site. Light green twice-divided fronds give plant an airy look.
Sage, Lyre-Leaved <i>Salvia lyrata</i>	8a-10a	Low	L	Partial Sun	Spring - Fall	Purple - Blue	1.5'	Medium	Perennial	Attractive wildflower or butterfly garden plant. Purple-green basal leaves. Slender stalks of purple-blue flowers.
Sage, Tropical Red <i>Salvia coccinea</i>	8a-11	Low	M	Full Sun	All Year	Red	2'	Medium	Perennial	Colorful wildflower garden addition. Red flowers attract butterflies and hummingbirds. Re-seeds profusely.
Saltgrass <i>Distichlis spicata</i>	8b-11	Low	H	Full Sun	N/A	N/A	1.5'	Medium	Turfgrass	Good substitute for turfgrass in coastal areas. Can handle high temps and brackish water. Can be mowed.
Saltmeadow Cord Grass <i>Spartina patens</i>	8a-11	Low	H	Full Sun	Spring - Fall	Green	2'	Medium	Ornamental Grass	Border or background plant. Spreads by rhizome eventually creating mats. Well-adapted to salty conditions.
Sand Cord Grass, Switchgrass <i>Spartina bakeri</i>	8b-11	Low	M	Full Sun	Fall - Spring	Green	3-6'	Medium	Ornamental Grass	Massed or accent plant with a delicate look. Robust perennial of saltmarshes and dunes. Stabilizes dunes and parking lots. Can handle moist conditions.
Sea Oats <i>Uniola paniculata</i>	8a-11	Low	H	Full Sun	Spring - Fall	Green	3-6"	Medium	Ornamental Grass	Protected species. Stabilizes beach dunes. Flower and seed heads are distinctive and attractive in dry flower arrangements. Doesn't do well away from the coast.
Sea Oxeye Daisy <i>Borrchia frutescens</i>	8b-11	Low	H	Full Sun	Spring - Summer	Yellow	3'	Medium	Semi-woody Perennial	Bedding plant. Excellent seaside plant with silvery foliage. Forms extensive colonies.
Sea Purslane <i>Sesuvium portulacastrum</i>	9-10b	Low	H	Full Sun	All Year	Pink	.5'-1'	Medium	Perennial	Small, neat, non-invasive bedding plant. Handles saline conditions well. Succulent beach stabilizer wildflower.
Seashore Dropseed <i>Sporobolus virginicus</i>	8a-11	Low	H	Full Sun	N/A	N/A	1'	Medium	Turfgrass	Good substitute for turfgrass in low coastal areas. Spreads by rhizome to form mats. Skipper butterfly host plant. Mows well.
Seashore Paspalum <i>Paspalum vaginatum</i>	8b-11	Low	H	Full Sun	N/A	N/A	2'	Medium	Turfgrass	Excellent species for seaside planting. Coastal grass, dune stabilizer and lawngrass. Spreads by rhizome. Mows well.
Seaside Goldenrod <i>Solidago sempervirens</i>	8a-11	Low	H	Partial Sun	Spring - Fall	Yellow	6'	Medium	Perennial	Wonderful addition to wildflower gardens. Flower spike 3-4 feet tall. Spreads by rhizome. Non-allergenic.
Shrub Verbena <i>Lantana depressa</i>	10b-11	Low	H	Full Sun	All Year	Yellow	.5'-6'	Medium	Perennial	Accent or edge plant. Most plants of <i>Lantana depressa</i> in cultivation are hybrids. Native hybridizes freely with <i>Lantana camara</i> . Excellent butterfly plant.
Smooth Water-Hyssop <i>Bacopa monnieri</i>	8a-11	Low	H	Full Sun	Summer	White, Purple, Pink	.5'	Medium	Perennial	Succulent mat-forming butterfly host plant. Flowering groundcover for wet areas. Can handle some brackish water inundation.
Snowberry <i>Chiococca alba</i> = <i>C. pinetorum</i>	9b-11	Low	H	Partial Sun	All Year	Yellow	10"	Medium	Evergreen Vine-like	Inconspicuous flowers provide a pleasant fragrance. White fruits contrast nicely against its shiny green foliage.
Southern Shield Fern <i>Thelypteris kunthii</i>	8a-10b	Low	L	Partial Sun	N/A	N/A	2.5'	Medium	Fern	Accent or foundation plant. Erect to arching fronds. Soft appearance. Can grow on rocks and in shade.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference



Royal Fern
Osmunda regalis



Sage, Tropical Red
Salvia coccinea



Saltmeadow Cord Grass
Spartina patens



Sea Oats
Uniola paniculata



Sea Oxeye Daisy
Borrchia frutescens



Smooth Water-Hyssop
Bacopa monnieri



Snowberry
Chiococca alba



Southern Shield Fern
Thelypteris kunthii

GROUNDCOVERS & GRASSES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Spider Lily <i>Hymenocallis latifolia</i>	9b-11	Low	H	Full Sun	Summer	White	3'	Medium	Perennial	Accent or foundation plant. Strap-like leaves. Showy, fragrant flowers attractive to large hawkmoths. Low maintenance. Susceptible to lubber grasshoppers.
Verbena, Beach <i>Glandularia (Verbena) maritima</i>	8b-11	Low	H	Full Sun	Summer or All Year	Lavender	1'	Medium	Perennial	Also called Coastal Mock Vervain. Readily spreads and re-seeds in sandy, well-drained areas. Does not like to be mulched.
Wild Columbine <i>Aquilegia canadensis</i>	8a-8b	Low	L	Partial Sun	Spring	Red	3'	Medium	Perennial	Dainty plant with nodding blooms. Endangered in Florida.
Wild Petunia <i>Ruellia caroliniensis</i>	8a-10a	Low	L	Full Sun	Spring	White - Purple	1'-3'	Medium	Semi- woody	Pale blue flowers brighten up shady wooded areas, also sunny sites.
Wiregrass <i>Aristida stricta</i> = <i>A. beyrichiana</i>	8a-10a	Low	L	Full Sun	N/A	N/A	2'-3'	Medium	Bunchgrass	Flowers following fire. A gopher tortoise staple food. Ideal for mixing with wildflowers in dry areas.
Yellow Canna <i>Canna flaccida</i>	8a-11	Medium	L	Full Sun	Spring - Summer	Yellow	4'-5'	Medium	Perennial	Clumps readily expand in low, disturbed wet sites. Erect, robust perennial with showy yellow flowers. The canna leaf roller insect may chew foliage.
Yellowtop <i>Flaveria linearis</i>	8b-11	Low	H	Full Sun	Spring - Fall	Yellow	3'	Medium	Perennial	Goldenrod relative with dense flat-topped clusters of small yellow flowers. Easy to grow and propagate.
NON-NATIVE SPECIES										
Agapanthus <i>Agapanthus africanus</i>	9a-11	Low	L	Partial Sun	Spring - Summer	Blue - Lavender	2'	Medium	Perennial	Clumping mound-shaped bedding or accent plant with showy flowers. Relatively short-lived in South Florida. Good container plant.
Aloe <i>Aloe vera</i> = <i>A. barbadensis</i>	10a-11	Low	H	Partial Sun	Spring - Summer	Yellow	1.5'	Medium	Perennial	Clump-forming coarsely textured specimen plant. Fleshy leaves have sap that soothes burns and cuts. Requires well-drained soils.
Anthurium <i>Anthurium andreanum</i>	10a-11	Low	L	Partial Sun	All Year	White - Scarlet	2'	Medium	Perennial	Showy heartshaped bract varies from white to deep red with flower spike projecting from center. Well-drained coarse soils discourage crown rot. Time-release fertilizer encourages flowering. Only slight drying between waterings.
Apostle Plant <i>Neomarica northiana</i>	10-11	Low	L	Partial Sun	Spring - Summer	White, Purple	3'	Medium	Perennial	Clumping groundcover with showy flowers and ridged sword-shaped leaves. Spreads by creeping rhizomes. Best in partial shade, well-drained rich soil.
Artillery Plant <i>Pilea microphylla</i>	10b-11	Low	L	Partial Sun	Summer	White - Pink	1'	Medium	Annual/ Perennial	Short-lived groundcover with a fern-like appearance. Spreads by seed and root expansion. Varied cultivars available. Persistent and hardy. Inconspicuous flowers.
Asian Sword Fern <i>Nephrolepis multiflora</i>	INVASIVE NON-NATIVE PLANT. See Plants not recommended for Landscaping (pages 15-17).									
Asparagus Fern <i>Asparagus aethiopicus</i> = <i>A. densiflorus</i>	INVASIVE NON-NATIVE PLANT. See Plants not recommended for Landscaping (pages 15-17).									
Bahiagrass <i>Paspalum notatum</i>	8a-11	Low	L	Full Sun	N/A	N/A	2'	Medium	Turfgrass	Low-maintenance, deep-rooted turfgrass. Tolerates wide range pH range in sandy soils, moderately shady conditions and foot traffic. Several cultivars available.
Begonia, Wax <i>Begonia cucullata</i> = <i>B. semperflorens</i>	8a-11	Low	L	Partial Sun	All Year	Red	1'	Medium	Annual/ Perennial	Compact bedding or accent plant with showy flowers and glossy leaves. Often succumbs to summer heat and nematodes. Sun-adapted cultivars available.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Wild Columbine
Aquilegia canadensisWild Petunia
Ruellia caroliniensisYellow Canna
Canna flaccidaYellowtop
Flaveria linearisAloe
Aloe veraAnthurium
Anthurium andreanumApostle Plant
Neomarica northianaBegonia, Wax
Begonia cucullata

GROUNDCOVERS & GRASSES

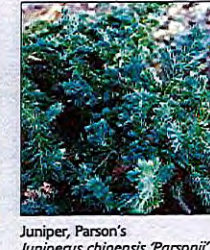
Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Bermuda Grass <i>Cynodon dactylon</i>	8a-11	Low	H	Full Sun	N/A	N/A	.5'	Fast	Turfgrass	High-maintenance, fine-textured turfgrass commonly found on golf courses or athletic fields. Several cultivars available with similar characteristics.
Bird's Nest Fern <i>Asplenium nidus</i>	10b-11	Medium	L	Partial Sun	N/A	N/A	2.5'	Medium	Fern	Asian fern with stiff erect fronds arranged in a rosette. Grows well in containers or aerially mounted as an epiphyte.
Cast-iron Plant <i>Aspidistra elatior</i>	9a-11	Low	M	Partial Sun	All Year	Inconspicuous	2'	Medium	Perennial	Upright, clumping, coarse textured groundcover or accent plant with glossy, dark green leaves. Tolerates harsh site conditions.
Centipede Grass <i>Eremochloa ophiuroides</i>	8a-8b	Low	H	Full Sun	All Year	N/A	.5'	Fast	Turfgrass	Low-maintenance vigorous turfgrass. Will not withstand foot traffic. Susceptible to nematodes and other diseases. Dense, low growing.
Daylily <i>Heemerocallis hybrids</i>	8a-10b	Low	M	Full Sun	Spring-Summer	Many	3'	Medium	Perennial	Lily-like clump forming groundcover or mass planting. Individual flowers only last one day. Thousands of cultivars available.
False Heather <i>Cuphea hyssopifolia</i>	9b-11	Low	L	Partial Sun	All Year	Purple - White	1.5'	Medium	Semi-woody Perennial	Compact groundcover or edging plant with fine texture and low branching. Showy flowers more prevalent during warm months.
Fountain Grass <i>Pennisetum setaceum</i>	8-11	Low	L	Full Sun	Spring - Summer	Reddish	3'	Medium	Ornamental Grass	Rather invasive plant that can spread and overtake other sites. Clumping bunchgrass used as a groundcover or accent plant. Feathery flower spikes 2-3 feet high. Green or purple foliage.
Ginger, Butterfly <i>Hedychium coronarium</i>	9a-11	Low	M	Partial Sun	Spring	White	5'	Medium	Perennial	Multi-stemmed clump forming accent plant with large showy, fragrant flowers. Readily divided into new plants. Will get very large if not periodically divided.
Holly Fern <i>Cyrtomium falcatum</i>	9a-11	Low	M	Partial Sun	All Year	N/A	1.5'	Medium	Perennial Fern	Dense groundcover with an arching form and leathery green foliage. Prefers moist, shady areas. Readily divided into new plants.
Iris <i>Iris spp.</i>	8a-9a	Low	L	Partial Sun	Spring	Blue, Purple	2'	Depends on species	Perennial	Upright groundcover or accent plant with flat sword shaped leaves and showy flowers. Different species have different growth requirements. Many cultivars available.
Juniper, Parson's <i>Juniperus chinensis 'Parsonii'</i>	8-10b	Low	M	Full Sun	Spring	N/A	2'	Medium	Conifer	Spreading groundcover, foundation or specimen plant with blue-green to grayish foliage depending on cultivar. Requires well-drained soil conditions.
Juniper, Shore <i>Juniperus conferta</i>	8a-10a	Low	H	Full Sun	Spring	N/A	2'	Medium	Conifer	Creeping groundcover or cascading plant with blue-green needle-like foliage. Prefers drier well-drained soils. Many cultivars available.
Kalanchoe <i>Kalanchoe blossfeldiana</i>	9b-11	Low	M	Full Sun	Winter	Many	1.5'	Medium	Perennial	Upright, glabrous bedding or accent plant with blue-green foliage and showy flowers that bloom in response to day length. Many cultivars available.
Lantana <i>Lantana camara</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Lantana, Gold Mound <i>Lantana camara 'Gold Mound'</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Lantana, Trailing <i>Lantana montevidensis</i>	9a-11	Low	H	Full Sun	All Year	Purple	2'	Medium	Perennial	Spreading groundcover or cascading planter box plant with showy flowers and aromatic leaves. Full sun and well-drained soil promotes compact growth. Sterile and non-invasive in Florida, unlike <i>Lantana camara</i> .

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Cast-iron Plant
Aspidistra elatiorFalse Heather
Cuphea hyssopifoliaGinger, Butterfly
Hedychium coronariumHolly Fern
Cyrtomium falcatumIris
Iris spp.Juniper, Parson's
Juniperus chinensis 'Parsonii'Lantana, Trailing
Lantana montevidensis

GROUNDCOVERS & GRASSES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Typical Height	Growth Rate	Plant Type	Comments
Lily Turf <i>Liriope</i> spp.	8a-10b	Low	M	Partial Sun	Summer	Purple, Pink	1'	Medium	Herbaceous	Dense clump forming grass-like groundcover with dark green recurving leaves and showy flower spikes. Will not tolerate foot traffic. Many cultivars available.
Mexican Bluebell <i>Ruellia tweediana</i> = <i>R. brittoniana</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Mondo Grass <i>Ophiopogon japonicus</i>	8-10b	Low	M	Partial Sun	Summer	White	6"-10"	Medium	Herbaceous Perennial	Dense stemless clumping groundcover commonly found in shady areas. Dark green grass-like leaves curve toward the ground. Will not tolerate foot traffic.
Oyster Plant <i>Tradescantia spathacea</i> = <i>Rhoeo spathacea</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Pampas Grass <i>Cortaderia selloana</i>	8a-10a	Low	H	Full Sun	Summer - Fall	White, Pink	6'	Medium	Ornamental Grass	Large clumping specimen grass with showy flower plumes on female plants and long, arching, serrated leaves. Excellent seaside plant. Tolerant of most soils.
Pentas <i>Pentas lanceolata</i>	8a-11	Low	L	Full Sun	All Year	Many	3'	Medium	Perennial	Sprawling groundcover, accent or low hedge with showy flowers and abundant leaves. Will not tolerate freezing temperatures. Relatively pest free.
Purple Queen <i>Tradescantia pallida</i> 'purpurea'	8a-10a	Low	H	Partial Sun	All Year	Light Pink	1'	Medium	Perennial	Sprawling groundcover with an open growth habit. Showy flowers open only in the morning. Colorful foliage. Will tolerate poor sites. Can become invasive.
Sage <i>Salvia</i> spp.	8a-11	Low	L	Full Sun	Summer	Many	2'-5'	Varies by species	Perennial	Bushy, upright bedding or planter box plant with showy flowers and bright green leaves. Many species are available. Flowering time is species-dependent.
Scarlet Milkweed <i>Asclepias curassavica</i>	9b-11	Low	L	Full Sun	All Year	Orange and Yellow	3'	Medium	Perennial	Upright accent or perennial border plant with showy flower clusters and narrow leaves. Tolerates most growing conditions. Attracts butterflies. Poisonous.
Society Garlic <i>Tulbaghia violacea</i>	8a-11	Low	M	Partial Sun	Spring - Fall	Purple	1.5'	Medium	Perennial	Tuberous grass-like clumping groundcover or accent plant with showy flowers and garlic scented foliage. Flowers best in full sun, but tolerates partial shade.
Spiral Ginger <i>Costus barbatus</i>	8a-11	Low	M	Partial Sun	Spring	Red	5'	Medium	Perennial	Colorful accent or specimen plant with showy, waxy flowers atop tall stalks and large spirally arranged leaves. Also called Red Torch Ginger.
St. Augustine Grass <i>Stenotaphrum secundatum</i>	8a-11	Low	H	Full Sun	N/A	N/A	6"	Medium	Turfgrass	Vigorous, dense coarse textured turfgrass. Many cultivars with very different characteristics available. Moderately high maintenance. Spreads by stolons.
White-Flowered Wandering Jew <i>Tradescantia fluminensis</i>	INVASIVE NON-NATIVE PLANT. See Plants Not Recommended for Landscaping (pages 15-17).									
Yellow African Iris <i>Diets bicolor</i>	9b-11	Low	L	Partial Sun	All Year	Yellow with Black Spots	3'	Medium	Herbaceous Perennial	Upright, clump-forming groundcover or accent plant with showy flowers and long, narrow leaves. Blooms about every 10 days.
Zoysia Grass <i>Zoysia</i> spp.	8a-11	Low	M	Partial Sun	N/A	N/A	6"	Medium	Turfgrass	Dense, fine textured turfgrass. Good shade tolerance. Tolerant of most soil conditions. Typically mowed with reel mowers. Moderate maintenance required.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Lily Turf
Liriope spp.Mondo Grass
Ophiopogon japonicusPentas
Pentas lanceolataPurple Queen
Tradescantia pallida 'purpurea'Sage
Salvia spp.Scarlet Milkweed
Asclepias curassavicaSociety Garlic
Tulbaghia violaceaSpiral Ginger
Costus barbatus

VINES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Growth Rate	Plant Type	Comments
NATIVE FLORIDA SPECIES									
Blue Jacquemontia <i>Jacquemontia pentanthos</i>	10-11	Low	H	Full Sun	Fall - Spring	Blue	Fast	Twining, Evergreen	Fast-growing, showy and pest-free. May be used as a groundcover or trained onto a trellis. Full blooms may produce hundreds of small (one inch wide) flowers. Excess moisture will cause decline.
Coral Honeysuckle <i>Lonicera sempervirens</i>	8a-10	Low	L	Full Sun	Spring - Fall	Orange - Red	Fast	Twining, Evergreen	Glossy, dark green leaves. Blooms best in full sun. Tubular flowers attract butterflies and hummingbirds. Red berries in fall attract other wildlife. Suitable for fences or on a trellis.
Corky-stem Passion Flower <i>Passiflora suberosa</i>	8b-11	Low	M	Full Sun	All Year	Green	Fast	Tendrils, Evergreen	Older vines have deeply grooved corky stems. Small flowers and purple fruits. Great variation in leaf shape. Important to butterfly tribe, Heliconiini (Longwings).
Crossvine <i>Bignonia capreolata</i>	8A-11	Low	L	Full Sun	Spring	Orange - Red	Fast	Tendrils, Evergreen	Climbs by tendrils bearing small, adhesive disks. Large, long-throated flowers attract hummingbirds. Blooms best in full sun. Cross sections of stems are cross-shaped.
Muscadine Grape <i>Vitis rotundifolia</i>	8a-11	Low	L	Full Sun	Spring - early Summer	Green	Fast	Tendrils, Evergreen	Inconspicuous flowers but has large, edible, purplish black fruit (grapes). This wild vine is an important wildlife food source. Grows easily on trellises, arbors or fences.
Passion Flower <i>Passiflora incarnata</i>	8a-10	Low	M	Full Sun	All Year	Bluish- purple	Fast	Tendrils, Deciduous	Also called Maypop. Larval food plant for butterflies. Edible fruit. Will sucker a distance away. Dies back to ground during winter.
Trumpet Vine <i>Campsis radicans</i>	8a-9	Low	H	Full Sun	Summer - early Fall	Orange - Red	Fast	Aerial Roots, Deciduous	Bold woody vine that is well suited for arbors or trellises. Best suited for informal sites. May become invasive. Hummingbird attractor. May cause mild skin irritation.
Virginia Creeper <i>Parthenocissus quinquefolia</i>	8a-11	Low	L	Full Sun	Spring	Yellow - Green	Fast	Creeping, Deciduous	Five rather than three leaflets distinguish it from poison ivy. Purple fruits and tiny flowers attract wildlife. Climbs by adhesive pads that may pock-mark paint or wooden surfaces.
Yellow Jessamine <i>Gelsemium sempervirens</i>	8a-9	Low	L	Full Sun	Winter - Spring	Yellow	Fast	Twining Evergreen	Can be trained to grow on a trellis, fence or arbor. Highly fragrant. Blooms best in full sun. Prune to prevent legginess. All parts of plant are poisonous.
NON-NATIVE SPECIES									
Allamanda, Yellow <i>Allamanda cathartica</i>	10a-11	Low	L	Full Sun	All Year	Yellow	Fast	Rambling, Evergreen	Suitable for fences or espalier, but requires support as it can get leggy. Large fragrant blossoms. Can be susceptible to magnesium deficiency. All parts of plant are poisonous.
Bleeding Heart <i>Clerodendrum thomsoniae</i>	8a-11	Low	L	Full Sun	Summer	White with Red	Fast	Twining, Evergreen	Named for its delicate white and red flowers this vine will grow to fit the size of its support, but will require some pruning over time. Prefers well-drained soils.
Bougainvillea <i>Bougainvillea spp.</i>	9b-11	Low	H	Full Sun	All Year	Varies	Fast	Spiry, Evergreen	A rambling, drought-resistant vine commonly used as espaliers. Wide variety of colors are available. Will not bloom if over watered. Blooms best in full sun. Be careful of thorns.
Bower Vine <i>Pandorea jasminoides</i>	10b-11	Low	L	Partial Sun	Late Spring - Summer	Pink-Red	Fast	Twining, Evergreen	Large vine that is well suited for oversized trellises. Prefers rich fertile soil and protection from strong winds. Fragrant funnel-shaped flowers attract butterflies and hummingbirds.
Bridal Bouquet <i>Stephanotis floribunda</i>	10b-11	Low	L	Full Sun	Spring - Summer	White	Fast	Twining, Evergreen	Tidy trellis vine with funnel-shaped, waxy fragrant flowers and shiny, leathery leaves with fast-growing tendrils. Flowers are a favorite for bridal bouquets.
Cat's Claw <i>Macfadyena unguis-cati</i>	INVASIVE NON-NATIVE PLANT. See Plants not recommended for Landscaping (pages 15-17).								

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Blue Jacquemontia
Jacquemontia pentanthosCoral Honeysuckle
Lonicera sempervirensCrossvine
Bignonia capreolataMuscadine Grape
Vitis rotundifoliaVirginia Creeper
Parthenocissus quinquefoliaYellow Jessamine
Gelsemium sempervirensAllamanda
Allamanda catharticaBougainvillea
Bougainvillea spp.

VINES

Common Name/ Scientific Name	Florida Hardiness Range	Watering Needs	Salt Tolerance	Light Range	Flower Season	Flower Color	Growth Rate	Plant Type	Comments
Ceriman <i>Monstera deliciosa</i>	10-11	Low	L	Partial Sun	Summer	White	Slow	Perennial Evergreen	Commonly found growing up tree trunks. Large, glossy leaves with deep splits and oblong holes. Creamy Jack-in-the-pulpit-like flower. Edible fruit takes over a year to ripen.
Confederate Jasmine <i>Trachelospermum jasminoides</i>	8a-10b	Low	M	Partial Sun	Spring	White	Medium	Spreading Evergreen	Popular pest-resistant trellis vine with showy, very fragrant flowers and thick, glossy evergreen leaves. Exudes white sap when cut. Also works well as a groundcover for large areas.
Dwarf Confederate Jasmine <i>Trachelospermum asiaticum</i>	8a-10b	Low	M	Partial Sun	Spring	Yellow - White	Medium	Evergreen	Forms dense, tangled mats when used as a groundcover. Small flowers have jasmine-like fragrance. Cannot tolerate extended freezes. Can be aggressive in growth.
Fig, Creeping <i>Ficus pumila</i>	8a-11	Low	M	Partial Sun	Spring	Green	Medium	Climbing, Evergreen	Aggressively attaches to masonry and walls. Tolerates freezing temperatures for short durations. Very drought tolerant once established. Commonly used in topiaries.
Garlic Vine <i>Cydista aequinoctialis</i>	10b-11	Low	L	Full Sun	Spring - Fall	Lavender, Pink	Medium	Climbing, Evergreen	Attractive, trumpet-shaped flowers. Prefers well-drained soil. Takes hard pruning after flowering. Crushed leaves smell like garlic.
Herald's-Trumpet <i>Beaumontia grandiflora</i>	10a-11	Low	L	Partial Sun	Spring	White	Medium	Twining, Evergreen	Large heavy vine suitable for arbors, screens or on a strong trellis. Large, fragrant flowers and large, glossy, dark green leaves. Good drainage is necessary for flower production.
Incense Passion Flower <i>Passiflora x 'incense'</i>	9a-11	Low	L	Partial Sun	All Year	Deep Purple	Medium	Tendrils, Evergreen	Vigorous fairly pest-free vine suitable for walls, fences or on a trellis. Large showy, fragrant flowers and edible fruit. Prefers well-drained soils. Protect from strong winds.
Japanese Honeysuckle <i>Lonicera japonica</i>	INVASIVE NON-NATIVE PLANT. See Plants not recommended for Landscaping (pages 15-17).								
Mandevillea <i>Mandevilla spp.</i>	9b-11	Low	M	Partial Sun	All Year	Pink	Medium	Twining, Evergreen	Long blooming screening vine with trumpet-shaped flowers. Cold sensitive. Requires full sun and well-drained soils for best flowering. Blooms heaviest in summer.
Marine Ivy <i>Cissus antarctica</i>	8a-11	Low	H	Full Sun	Spring	Green	Medium	Tendrils, Evergreen	Woody or semi-woody vine to 30 feet long with tuberous roots. Inconspicuous flowers. Vigorous, pest-free vine suitable for arbors. Very drought-tolerant once established.
Queen's Wreath <i>Petrea volubilis</i>	10a-11	Low	L	Partial Sun	Winter - Summer	Lavender, Purple	Medium	Twining, Evergreen	Popular, woody vine for lattices, arbors and trellises with persistent flowers and rough green leaves. Prefers rich, sandy soil. Used in South Florida as a wisteria substitute.
Purple Passion Flower <i>Passiflora edulis</i>	9b-11	Low	L	Full Sun	All Year	Lavender, White	Medium	Tendrils, Evergreen	Fruits are delicious raw or processed. This fruit gives Hawaiian Punch its distinctive taste. Will tolerate cool periods (40-55° F) and slight frosts (28° F) for short periods.
Scarlet Passion Flower <i>Passiflora coccinea</i>	9b-11	Low	L	Full Sun	All Year	Red	Medium	Tendrils, Evergreen	Exotic, bright crimson flowers. Frost tender and requires protection from the winds. Prefers rich, well draining soil. Heavily damaged by nematodes. Requires strong support.
Thunbergia <i>Thunbergia spp.</i>	9b-11	Low	L	Partial Sun	All Year	Blue, Purple	Medium	Twining, Evergreen	Vigorously aggressive vine with a cascading flower that makes this vine an excellent choice for high lattice work or arbors. Also known as Sky Flowers and Clock Vines.

WATERING NEEDS Low Medium High

LIGHT Full Sun Partial Sun Shade

GROWTH RATE Slow Medium Fast

Note: soil moisture and light listed in order of plant preference

Ceriman
Monstera deliciosaConfederate Jasmine
Trachelospermum jasminoidesFig, Creeping
Ficus pumilaIncense Passion Flower
Passiflora x 'incense'Mandevillea
Mandevilla spp.Queen's Wreath
Petrea volubilisScarlet Passion Flower
Passiflora coccineaThunbergia
Thunbergia spp.

Glossary

acid — A condition which is derived by partial exchange of replaceable hydrogen, an element that is sour, on the pH scale; acid conditions are any pH below 7.0 which is neutral.

alkaline — The condition of water or soil that contains an amount of alkali substances (various soluble salts) to raise the pH above 7.0; when extreme, alkalinity is caustic.

aquifer — A layer of underground rock or sand which stores and carries water.

brackish — Somewhat salty.

conserve — To use only what is needed.

deciduous — Losing foliage in autumn or winter.

ecotones — Regions where one ecosystem blends into another.

epiphyte — A plant that gets its moisture and nutrients from the air and rain.

groundcovers — Small plants that grow close to the ground.

groundwater — Water below the earth's surface.

herbaceous — Having the texture, color or appearance of a leaf, with little or no woody tissue.

humus — Decomposed plant or animal matter; the organic portion of soil.

hydric — Characterized by abundant moisture.

inorganic — Composed of matter other than plant or animal.

leach — To pass through by percolation.

marl — A loose, earthy deposit containing a substantial amount of calcium carbonate; used for soils deficient in lime.

mesic — Moist conditions; characterized by a moderate amount of moisture.

microclimate — A small-scale site of special conditions within a larger climate.

oasis — A restricted area of the landscape where specimen or colorful plants are used, although they may require more maintenance and water.

plat — A plan or map of a piece of land.

potable — Water suitable for human consumption.

practical turf area — A place where grass serves a function, such as a child's or pet's play area, or an area designed to receive stormwater runoff and pollution.

saline — Containing salt.

saltwater intrusion — When salt water moves into the freshwater zone of an aquifer, making the water unfit for drinking.

specimen planting — A plant located as a stand-alone highlight in a landscape design.

stormwater runoff — Rainwater that runs off surfaces into water bodies.

succession — A series of ecosystem changes where plants compete, succeeding and displacing each other as they respond to, and so modify, their environment.

topography — Natural features of land.

water table — The upper limit of where groundwater permeates the ground.

wetlands — Vegetated areas having high soil moisture year-round.

xeric — Characterized by dry conditions; requiring only a small amount of moisture.

Bibliography

Bailey, Liberty Hyde. *Manual of Cultivated Plants*. New York, NY: Macmillan, 1949.

Bell, C. Ritchie, and Bryan J. Taylor. *Florida Wild Flowers and Roadside Plants*. Chapel Hill, NC: Laurel Hill Press, 1982.

Betrock's Florida Plant Guide. Hollywood, FL: Betrock Information Systems, 1996.

Black, Robert J., and Edward F. Gilman. *Your Florida Guide to Bedding Plants: Selection, Establishment and Maintenance*. Gainesville, FL: University Press of Florida, 1997.

Brandies, Monica Moran. *Herbs and Spices for Florida Gardens*. Wayne, PA: B.B. Mackay Books, 1996.

Broschat, Timothy K., and Alan W. Meerow. *Betrock's Reference Guide to Florida Landscape Plants*. Hollywood, FL: Betrock Information Systems, 1996.

Dehgan, Bijan. *Landscape Plants for Subtropical Climates*. Gainesville, FL: University Press of Florida, 1998.

Gilman, Edward F. *Hortiscopia: Trees, Shrubs and Groundcovers*, 2d ed. CD-ROM. Purcellville, VA: Hortiscopia, 1998.

———. *Hortiscopia: Perennials and Annuals*, 2d ed. CD-ROM. Purcellville, VA: Hortiscopia, 1998.

Gilman, Edward F., and Robert J. Black. *Your Florida Guide to Shrubs*. Gainesville, FL: University Press of Florida, 1999.

Haehle, Robert G., and Joan Brookwell. *Native Florida Plants*. Houston, TX: Gulf Publishing Company, 1999.

Hammer, Roger L. *Everglades Wildflowers: A Fieldguide to Wildflowers of the Historic Everglades, Including Big Cypress, Corkscrew and Fakahatchee*. Guilford, CT: Globe Pequot Press, 2002.

Jameson, Michael, and Richard Moyroud, eds. *Xeric Landscaping With Florida Native Plants*. Association of Florida Native Nurseries, 1991.

Langeland, K.A., and K. Craddock Burks, eds. *Identification and Biology of Non-Native Plants in Florida's Natural Areas*. Gainesville, FL: Institute of Food and Agricultural Sciences Publications, University of Florida, 1999.

Little, Elbert L. *National Audubon Society Field Guide to North American Trees, Eastern Region*. New York, NY: Alfred A. Knopf, 1980.

Mabberley, D.J. *The Plant-Book: A Portable Dictionary of the Higher Plants*. Cambridge, MA: University Press, 1987.

MacCubbin, Tom, and Georgia Tasker. *Florida Gardener's Guide*. Franklin, TN: Cool Springs Press, 1997.

Maxwell, Lewis S. *Florida Fruit*. Tampa, FL: Lewis S. Maxwell, 1967.

McGeachy, Beth. *Handbook of Florida Palms*. St. Petersburg, FL: Great Outdoors Publishing Company, 1977.

Meerow, Alan W. *Betrock's Guide to Landscape Palms*. Hollywood, FL: Betrock Information Systems, 1992.

Morton, Julia F. *Fruits of Warm Climates*. Winterville, NC: Creative Resource Systems, 1987.

Myers, Ronald L., and John J. Ewel, eds. *Ecosystems of Florida*. Orlando, FL: University of Central Florida Press, 1991.

Nelson, Gil. *The Trees of Florida*. Sarasota, FL: Pineapple Press, 1994.

———. *The Shrubs and Woody Vines of Florida*. Sarasota, FL: Pineapple Press, 1996.

Osorio, Rufino. *A Gardener's Guide to Florida's Native Plants*. Gainesville, FL: University Press of Florida, 2001.

Shaefer, Joe, and George Tanner. *Landscaping for Florida's Wildlife: Re-creating Native Ecosystems in Your Yard*. Gainesville, FL: University Press, 1998.

Stresau, Frederic. *Florida, My Eden*. Port Salerno, FL: Florida Classics Library, 1986.

Suncoast Native Plant Society. *The Right Plants for Dry Places: Native Plant Landscaping in Central Florida*. St. Petersburg, FL: Great Outdoors Publishing Company, 1997.

Taylor, Walter Kingsley. *The Guide to Florida Wildflowers*. Dallas, TX: Taylor Publishing Company, 1992.

———. *Florida Wildflowers in Their Natural Communities*. Gainesville, FL: University Press of Florida, 1998.

Wade, Gary, and James T. Midcap, et al. *Xeriscape: A Guide to Developing a Water-Wise Landscape*. Athens, GA: Cooperative Extension Service – The University of Georgia College of Agricultural and Environmental Sciences and The Georgia Water Wise Council, Inc., 1992.

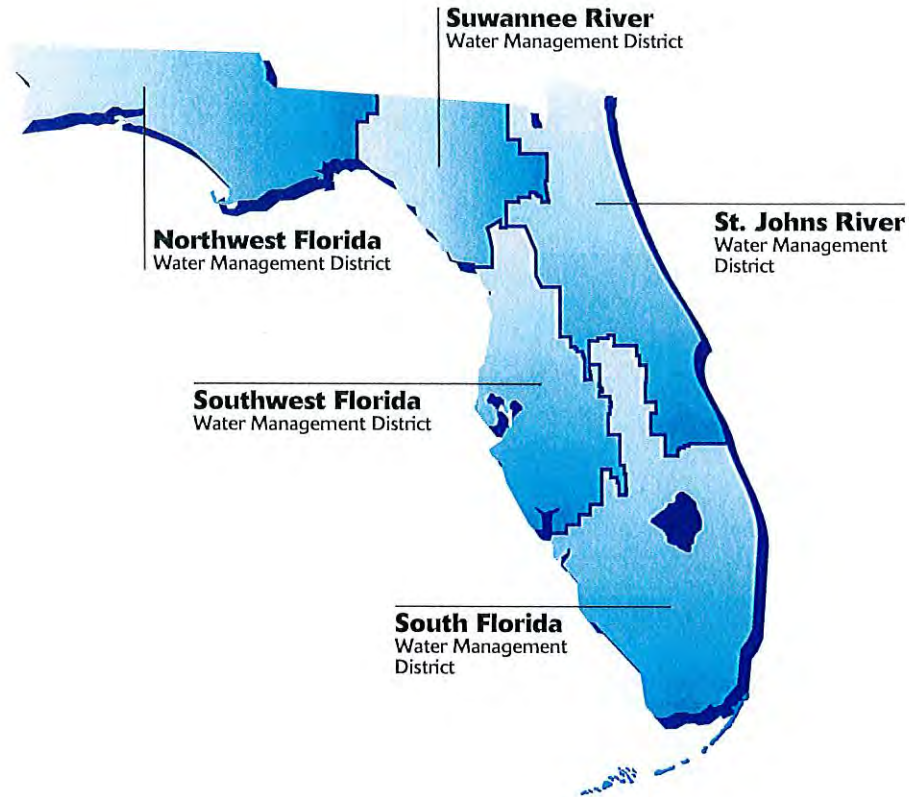
Wasowski, Sally. *Gardening With Native Plants of the South*. Dallas, TX: Taylor Publishing Company, 1994.

Watkins, John, and Thomas J. Sheehan. *Florida Landscape Plants*, revised edition. Gainesville, FL: University Press of Florida, 1975.

Wunderlin, Richard. *Guide to the Vascular Plants of Florida*. Gainesville, FL: University Press of Florida, 1998.

Yarlett, Lewis L. *Common Grasses of Florida and the Southeast*. Spring Hill, FL: Florida Native Plant Society, 1996.

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Model Native Plant Landscape Ordinance Handbook



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TABLE OF CONTENTS

I. OVERVIEW	3
II. AUTHORITY TO ENACT LANDSCAPE ORDINANCES	4
III. METHODS	5
IV. ISSUES	6
V. ANNOTATED MODEL LANDSCAPE ORDINANCE REQUIRING THE USE OF ONLY APPROPRIATE NATIVE VEGETATION ...	9

APPENDIX A

Existing “Native Plant” Definitions	38
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APPENDIX B

References from the Model Ordinance	41
○ Definition of a “Florida Native Plant,” FNPS Board of Directors, 1994	
○ Cost Comparison for Landscape Planting, Karina Veaudry	
○ Excerpt from Sarasota County Water-Efficient Landscaping Regulations	
○ Audubon Cooperative Sanctuary Program (ACSP) for Golf	
○ Description of the City of Scottsdale, Arizona native plant protection strategies	
○ City of Scottsdale, Arizona, Native Plant Protection Ordinance	
○ Voluntary Codes of Conduct for Botanic Gardens and Arboreta, February 2002	
○ Excerpt from City of Jacksonville Landscape Commission Ordinance	
○ Excerpt from City of Jacksonville Tree Protection Regulations	
○ Excerpt from City of Winter Park Tree Replacement	
○ City of Sanibel Landscape Ordinance	
○ Palm Beach County Prohibited Invasive Non-Native Vegetation Removal Ordinance	

I. OVERVIEW

Appropriate native vegetation is defined as vegetation found in the natural community that is suited to the soil, topography, and hydrology of a particular site. Current landscape laws and regulations in Florida fail to adequately protect and encourage the use of native plant species, leading to landscape that is damaging to the natural environment. The Florida Native Plant Society (FNPS) presents these model landscape guidelines and landscape ordinance suggestions that require the use of only appropriate native vegetation in all public landscaped areas and minimum percentages of appropriate native vegetation for private, newly landscaped areas.

Key issues that threaten Florida's native plant populations that warrant analyzing regulatory and incentive based policies are the elimination of harmful, Invasive plant species and to provide much needed protection for threatened and endangered native species.

Local governments can derive substantial benefits from promoting and protecting native vegetation that is appropriate to the area. "Appropriate native vegetation" is vegetation found in the natural community that is suited to the soil, topography, and hydrology of a particular site.¹ The use of appropriate native vegetation in local landscaping can help achieve water conservation goals, preserve habitat in urban areas, greatly reduce maintenance costs for landscaping, and protect property values.

This model ordinance is intended to be used by local governments that wish to adopt or amend their existing landscape ordinance to encourage or require the use of appropriate native vegetation in all landscaped areas. This document provides sample language that can be adopted by a local government that wants to promote these goals and acquire the benefits of appropriate native landscaping. The ordinance guidelines have been annotated to provide background information and rationales behind the key provisions. These annotations, noted in italics, serve to explain the importance of each provision and are not official language that would be adopted as a part of the landscape ordinance.

The model ordinance is designed to be used by local governments to improve the landscape principles that guide landscaping of all new developments. Local governments may decide to adopt this ordinance in whole or only certain provisions, as others may be covered by existing regulations. The annotations also include alternative drafting options that provide flexibility for a community to adopt a landscape ordinance that promotes appropriate native vegetation and meets its particular needs.

The goal of the model ordinance is to provide a comprehensive plan to promote appropriate native vegetation and best landscaping practices. It therefore includes provisions to address issues such as education about native plants, including a requirement for a landscape manual that delineates best landscaping practices using native plants.

In addition, this model ordinance provides a framework against which existing ordinance provisions can be questioned, including those which allow the expansive use of Invasive plants that are detrimental to the environment. It includes provisions that prohibit these harmful plants

¹ Pais, D. 1994. Toward a Working Definition of "Florida Native Plant" *The Palmetto*, 14(3), 17. Available at <http://www.fnps.org/palmetto/v14i3p17pais.pdf> (July 6, 2002).

as well as establishes protection methods for endangered and threatened plants that are often weakly protected or ignored in existing landscape codes.

Many city and county governments throughout Florida have already addressed the preservation and planting of Florida native plants in their communities. The following is a listing of those municipalities that have taken a pro-active approach:

Brevard - 50% Native vegetation required

- Satisfaction of the landscaping standards shall be achieved through the preservation of existing native vegetation to the Greatest Extent Feasible. When the minimum landscaping standards cannot be achieved through preservation, plantings of new vegetation shall be required to meet the standards.

Dade County - 30% Native vegetation required

Indian River County - 50% Native vegetation required

- Minimum number of species diversity required
- Wide planted buffers between commercial properties & along roadways

Islamorada - 75% Native vegetation required

- The director of planning and development services may reduce the height requirement 50 percent for rare native plant species.

Key Colony Beach - 50% Native vegetation or xeriscape vegetation required

Key West - 70% Native vegetation required

- The natural landscape of the site shall be preserved as much as possible
- Prior to the issuance of a certificate of occupancy for a new development, the owner/applicant shall remove all nuisance and Invasive vegetation from the site for which a development order or permit is requested.
- The clearing of native vegetation sufficient to create the required landscape screening or portion thereof is prohibited without approval from the city
- Credit shall be granted for trees which are preserved on a site and which meet the tree requirements of any landscaping section of this division

Lee County - 75% Native vegetation required for tree species; 50% Native vegetation required for shrub and groundcover species

Manatee County - 30% Native vegetation required

- Residential Street Trees: Existing native trees should be used to fulfill ordinance requirements when feasible
- Preserve native plant communities is encouraged and required as appropriate
- Right plant in the right place for soil conditions
- Plantings in required landscape areas shall be with plant species that are native and/or naturalized to Florida. All required landscape areas shall retain existing native trees, shrubs, groundcover and grasses to the greatest extent

possible. Native plant species typical to the vegetative communities found in non-coastal Manatee County shall be encouraged.

Marathon - 70% Native vegetation required

Martin County – 50% Native vegetation required

Monroe County – 70% Native vegetation required

Miami - 30% Native vegetation required

- The right plant in the right place for dry and wet soils
- Reduce negative impact of exotic pest plant species
- Prohibit use of noxious exotic plants which invade native plant communities
- Maximum size of turfgrass lawn area
- One native plant per square foot in retention/detention areas

Ocoee – 40% Native tree required; 40% Native shrubs and groundcover required.

Pasco County – 30% Native vegetation required.

Polk County - Recommends native vegetation and includes native vegetation on the recommended plant list

St. Lucie County - 50% Native vegetation or waterwise landscape required

- Existing, native trees, vegetation and other natural features shall be preserved to the extent practicable.
- Residential: 100% of the planted trees shall consist of native species or waterwise vegetation
- Agriculture/horticulture buildings: 100% of the planted trees shall consist of native species
- Large scale residential and commercial: A minimum of 15% of any existing native upland habitat on the property must be preserved in its natural condition as part of the required 35 percent common open space. For each acre of preserved native habitat above the required minimum 15 percent that is preserved in its original state, credit shall be given at a rate of 150 percent per acre towards the remaining common open space requirement.
- Planned Unit Developments: A minimum of 50% of any existing native upland habitat on the property must be preserved in its natural condition as part of the required open space. For each acre of preserved native habitat above the required minimum 50% that is preserved in its original state, credit shall be given at a rate of 150% per acre towards the remaining open space requirement.
- The preservation of existing native vegetation shall be required where the location of said vegetation is not in conflict with the proposed building or parking areas.

- The County may require that reasonable changes be made to any site plan or application for building permit for the purpose of preserving or protecting any special or unique existing tree(s) or native habitat.
- 100% of required lawn areas shall consist of water-wise turfgrasses listed in Section 7.09.04(L)(2)(a).
- If the site's proposed landscape plan preserves all or a substantial part of the existing native vegetation found on the property, then the requirements of this landscape section may be presumed to be satisfied. The county shall determine if the quality and quantity of the preserved native vegetation meets the intent of this Code. Preservation of existing native upland plant communities on the site may substitute for all landscape requirements if:
 1. The existing native plant communities shall be viable and in good condition and include canopy, understory, and ground cover.
 2. The existing native plant community/communities is protected by a conservation easement or other legally enforceable preservation mechanism.
 3. The execution of the site plan will not threaten the viability of the existing native plant community.
 4. The plant community to be preserved shall be at least one-half (1/2) acre in size, except that micro-communities totaling at least one-half (1/2) acre may be preserved providing that each micro-community is at least ten (10) feet in width and contains at least one hundred (100) square feet.
 5. A management plan is submitted to show how the viability of the preserved communities will be maintained without the use of heavy equipment.

II. AUTHORITY TO ENACT LANDSCAPE ORDINANCES

Local governments may adopt ordinances in the interests of public health, safety, and welfare, as long as their powers are exercised for a valid public purpose² and the means chosen to serve the purpose are not arbitrary or unreasonable.³ The Municipal Home Rule Powers Act implements home rule provisions of the Florida Constitution that provide that counties and municipalities have governmental, corporate, and proprietary powers to enable them to conduct government, perform governmental functions, and render governmental services, except when expressly prohibited by law.⁴ Article VIII of the Florida Constitution grants counties and municipalities the power to enact legislation.⁵ Procedures for the adoption of ordinances and resolutions are provided by section 166.041 of the Florida Statutes. A county or municipality may also, under its home rule powers, proscribe penalties for violation of its ordinances.⁶ Any prior ordinances are repealed to the extent that they are in conflict with a subsequent adopted ordinance.⁷

Landscape ordinances nationwide have been upheld under the power local governments have to apply restrictions to private land in the interest of public health, safety, and welfare. The power of cities to apply restrictions to the use of private land was upheld in 1926 in *Euclid v. Ambler Realty*,⁸ which is the basis of modern zoning laws. The Supreme Court in *Euclid* determined that “every community has the right to determine its own character and the nature of development within.” This authority validated in *Euclid* was successfully applied to planting requirements for the first time in 1949 in *Ayres v. City Council of Los Angeles*.⁹ Furthermore, in 1954, the Supreme Court upheld a local government’s ability to require plantings as a means of beautification in *Berman v. Parker*,¹⁰ stating that:

The concept of the public welfare is broad and inclusive. The values it represents are spiritual as well as physical, aesthetic as well as monetary. It is within the power of the legislature to determine that the community should be beautiful as well as healthy, spacious as well as clean, well balanced, as well as carefully patrolled.¹¹

Landscape ordinances have also been consistently upheld by the Florida courts.¹² Thus, a local community can enact an ordinance, such as this model landscape ordinance, in the interests of public health, safety, and welfare. In addition, in sections 125.568 (Counties) and 166.048

² State v. City of Sunrise, 354 So. 2d 1206, 1209 (Fla. 1978).

³ Carter v. Town of Palm Beach, 327 So. 2d 130 (Fla. 1970).

⁴ FLA. STAT. § 166.021(1) (2004).

⁵ Municipalities pursuant to Section 2(b), Article VIII, Fla. Const.; Counties pursuant to Section (1)(f) [non-charter counties] and section (1)(g) [charter counties], Article VIII, Fla. Const.

⁶ Thomas v. State, 583 So. 2d 336 (1991), approved 614 So.2d 468.; Op. Atty. Gen. No.89-24, April 21, 1989.

⁷ Greeley v. City of Jacksonville, 17 Fla. 174 (1879).

⁸ Village of Euclid, Ohio v. Ambler Realty Co., 272 U.S. 365 (1926).

⁹ Ayres v. City of Los Angeles, 207 P.2d 1 (1949).

¹⁰ Berman v. Parker, 348 U.S. 26 (1954).

¹¹ *Id.*

¹² See e.g. City Nat. Bank of Miami v. City of Coral Springs, 475 So. 2d 984 (Fla. App. 4 Dist., 1985) (finding that city validly imposed a condition of approval for proposed plat for convenience store of a ten-foot buffer strip of landscaped area along one boundary of the plat, as reasonable application of the city’s code of ordinances)

(Cities) of the Florida Statutes, the State of Florida recognizes the scarcity of natural resources, particularly water resources, requiring that local governments consider adopting ordinances that will reduce the amount of water used for irrigation of landscapes.

Consistency with the Comprehensive Plan

All ordinances must be consistent with the local Comprehensive Plan. Each local government in Florida is required to adopt a comprehensive plan for the lands within its jurisdiction pursuant to the Local Government Comprehensive Planning and Land Development Regulation Act (“Growth Management Act”), F.S. § 163.3161 through 163.3217. A landscape ordinance is a land development regulation (LDR)¹³, and in order for an LDR to be effective, it must be consistent with the local government’s existing comprehensive plan.¹⁴ The comprehensive plan is like a constitution that states goals, objectives, and policies for future planning of the local government.¹⁵ If any provision of the ordinance is in conflict with the comprehensive plan language, then that provision will be held invalid.

Therefore, any local government wishing to protect native vegetation should also consider amending their comprehensive plan to include language, likely in the conservation element of the Comprehensive Plan, that encourages or requires the use of appropriate native vegetation on landscaped areas and encourages the protection of existing appropriate native plants. Since comprehensive plans are legislative actions, challenges to plans confront a very difficult “fairly debatable” standard whereby great deference is given to local legislative decisions.¹⁶ The challenger must show that the data and analysis relied upon to create the comprehensive plan was so deficient according to professional standards that no fair argument can be made in support of the decision.¹⁷

¹³ Florida statutes section 163. 3213(2)(b) defines “Land Development Regulation” as an “ordinance enacted by a local governing body for the regulation of any aspect of development, including a subdivision, building construction, *landscaping*, *tree protection*, or sign regulation or any other regulation concerning the development of land.”

¹⁴ FLA. STAT. § 163.3194(1)(b) (2004).

¹⁵ Machado v. Musgrove, 519 So. 2d 629, 632 (Fla. App. 3 Dist., 1987).

¹⁶ Martin County v. Yusem, 690 So.2d 1288 (Fla.1997).

¹⁷ See generally *id.*

III. METHODS

The purpose of drafting this ordinance is to create a reference by which a local government or community can amend their existing landscape ordinance or adopt a new landscape ordinance which will promote and protect appropriate native vegetation.

In order to draft this model ordinance, we researched existing landscape and tree protection ordinances from around the state of Florida and the nation.¹⁸ We first determined the essential legal elements of a landscape ordinance that must be included in order for the ordinance to be both valid and feasible. These provisions include procedures for variances, appeals, and resolution with conflicting laws.

We then compared each of these ordinances in terms of their strengths and weaknesses in protecting and promoting appropriate native vegetation. We determined that there was a wide range of landscape ordinances and approaches to landscaping both within the state of Florida and nationwide. Many of the ordinances failed to address native plants at all. Others contained landscaping requirements that could favor the use of non-native plants over natives. Some required that a certain percentage of the landscaped area be planted native. Most of these ordinances, however, failed to fully protect and promote native vegetation, particularly native vegetation that is appropriate to the particular soil, topography, and hydrology of a site. A main goal, therefore, in drafting this model ordinance was to create a feasible landscape ordinance that maximizes the use of appropriate native vegetation and encourages the protection of existing native vegetation.

In addition, we found that the majority of landscape ordinances fail to adequately deal with the problem of invasive plant species and lack adequate protections for threatened, endangered, and rare plant species. We therefore drafted provisions in this model ordinance to address these two elements of protecting native plants.

The model ordinance was initially presented for comments to a small, expert group of landscape architects and local government planners in November 2004. On February 24, 2005, a native plant ordinance workshop open to the public was held at the University of Florida to present the draft model ordinance and receive comments during a three week comment period. These comments were all reviewed and considered in further editing of the model ordinance.

¹⁸ One resource which was helpful in this research process is: BUCK ABBEY, U.S. LANDSCAPE ORDINANCES: AN ANNOTATED REFERENCE HANDBOOK (1998). This book contains a review of existing landscape ordinances nationwide.

IV. ISSUES

In drafting this model ordinance, the main goal was to design landscape provisions that are the most protective of appropriate native vegetation in order to ensure that the benefits of native landscaping, as listed in the “Purpose and Intent” in section 2 of the ordinance, are achieved. Additionally, our goal was to draft a model ordinance that could be adopted or used to amend an existing landscape ordinance by any local government or community. In order to satisfy these goals, we identified issues that are central to the challenges of drafting such an ordinance. These issues are addressed below:

How Native?

A major consideration facing communities considering a native plant ordinance is the extent to which native plant usage is required. Individuals within communities and native plant advocacy groups may differ in their approach to this question. Some communities establish a percentage of cover. For example, City of Sanibel has a 75% coverage requirement, the highest percent cover we encountered in Florida. This model ordinance addresses this by establishing an unspecified minimum percentage and requiring retention of existing appropriate native vegetation where possible. In the case of public property, the requirement is 85% native.

Appropriate Native Vegetation

Simply because a plant is a Florida native does not mean it should be planted on a specific site. Sites vary in their soil characteristics, topography, hydrology, fire regime, and these environmental factors influence the natural plant communities. Because Florida has a wide range of native plant communities, this ordinance leaves appropriateness determinations to individual local governments. In order to guide appropriateness determinations, the ordinance requires the community to establish landscape categories based on soil, topography, and hydrology and include a list of appropriate native plants for each landscape category in a technical manual that the local government must develop based on its plant communities.

Installation size requirements for native plant material are typically smaller in size than exotic plant material due to the fact that native plants are long lived and therefore takes longer to grow. Adjustments in plant installation size requirements may need to be made.

Plant lists should include a wide range of diversity and all commercially available native plants in groundcover, low shrub, large shrub, understory tree, canopy tree, wetland plants in the region should be listed.

Soil Additions

Any new soil required shall be similar to the existing soil in pH, texture, permeability & other characteristics.

Mulch

Cypress mulch is not recommended due to the detrimental effects of logging wetland and aquifer recharge areas to acquire this material. Natural leaf litter, pine needles or mulch nuggets from a sustainable source are preferred.

Landscape Requirements for Single-Family Residences

Generally, landscape ordinances do not apply to single-family residential properties. Single-family residences, however, often constitute a significant portion of a local government's landscaped areas. The inclusion of single-family residential properties in the requirements of this ordinance will therefore greatly increase the amount of habitat that is created and protected for appropriate native plants and associated native communities, as well as increase the benefits that will be received from a community-wide promotion of native plants.

A balance should be struck between achieving the goals of planting in all landscaped areas with appropriate native plants and imposing an onerous burden on residential landowners. This balance is achieved in the model ordinance by significantly lessening the requirements for landscape plan approval for single-family residential properties and allowing for flexibility in design. This includes the requirement that a single-family residential landowner submit a list of plants to be used in the landscaped area to ensure that they are appropriate native plants. A key to the effectiveness of the ordinance is education of the public and providing tools that are readily available to help landowners design native landscapes. Single-family landowners need to be aware of the benefits of native landscaping, the types of native plants that are appropriate to their particular area, and the landscape practices they should use.

Specificity of Landscape Needs By Locality: Landscape Manual

This model ordinance is designed to be used by any local government or community. Because landscape ordinances can be very complex and vary by the type of region in which the local government or community is located, as well as its needs, specific landscape requirements are difficult to draft in a model ordinance. Some communities choose very detailed requirements while others give only general guidelines.

Section 11 of this ordinance, "Landscaping Requirements," therefore, only suggests key topics that should be addressed in a landscaping requirements section, including protection of existing appropriate native vegetation. Each zoning category should have specific landscaping requirements to meet the unique needs in that landscape category. In addition, as noted in the annotations of the model ordinance, within each zoning category there may be additional requirements to deal specifically with very large developments and preservation of natural areas. This ordinance incorporates by reference a landscape manual which should be developed with local expertise.

Invasives as a Public Nuisance and Limits on Weed Control Laws

This ordinance is unique in its treatment of Invasives under Florida nuisance law. The ordinance declares Invasive species to be public nuisances and authorizes the local government to require removal. The local government must provide notice of the nuisance to a landowner and provide an opportunity for the landowner to cure the nuisance by removal, after which the local government may undertake removal and seek cost recovery. This is not unlike treatment given to other public nuisances, such as excessive wildfire fuel build up and hazardous structures.¹⁹ The ordinance also prohibits public and private “weed control laws.” Weed control laws have been used to harass native landscapers for failing to conform to aesthetic standards favoring exotics.

Rare, Threatened, and Endangered Plants

The ordinance also addresses the protection of threatened and endangered as well as rare plants and adopts an incentive based approach that includes expedited review, fee waivers, and other incentives. However, some communities have prohibited the removal of rare plants without authorization. The City of Scottsdale, Arizona, for example, requires a permit to remove any native listed as rare pursuant to their local ordinance.²⁰

Landscape Committee

This ordinance creates a landscape committee (Section 27) which advises the local governing body in matters of policy including developing the landscape manual. Responsibility for day-to-day implementation of this ordinance remains with local government staff.

Irrigation, Fertilizers and Pesticides

This ordinance does not address issues related to irrigation, fertilizers and pesticides. Local government authority to regulate irrigation may be restricted by the authority of the state’s water management districts.²¹ Fertilizer and pesticide use are also not addressed by the ordinance. However, there are state and local government precedents for the outright banning or restrictions on use of fertilizers, especially adjacent to water bodies.²²

Enforcement

In order for any landscape ordinance to be effective, it must be supported by effective enforcement.²³ This means that there must be sufficient resources for inspection of landscaped

¹⁹ J. Morgan Varner and David Steinau, Wildfire in Florida: Issues of Law and Forestry Practices, a report to the City of Waldo, Florida, June 2001 Available at <http://www.law.ufl.edu/conservation/pdf/firepaper.pdf>.

²⁰ City of Scottsdale Native Plant Ordinance, Ch. 46, Art. V.

²¹ FLA. STAT. § 373.217(2),(3),(4) (2004).

²² Recently, the City of Madison and surrounding Dane County in Wisconsin and the State of Minnesota have all passed measures that ban the sale and use of phosphorus fertilizers on domestic lawns. Each of these bans was passed in an attempt to prevent and reverse the continued cultural eutrophication in lakes and streams from phosphorus contamination. All of the measures provide limited exceptions in the case of a new lawn being established or the performance of a soil test showing a phosphorus deficiency. See Jason Evans & Adam Regar, Murky Waters: Fertilizer Ordinances and Best Management Practices as Policy Tools for Achieving Water Quality Protection in Florida’s Lakes, Streams, and Bays (December 2004)(available at http://www.law.ufl.edu/conservation/resources/resources_clinic.shtml)

²³ Duane R. Durgue, Alachua County Forester, *Characteristics of Good Tree Protection and Landscape Ordinances*.

areas, serious and deterrent punishment for violations, and effective incentives to promote and protect appropriate native vegetation. Because resources allocated to landscape enforcement are often limited, it is essential that landscape compliance is an integral part of the development approval process.

V. ANNOTATED MODEL LANDSCAPE ORDINANCE REQUIRING THE USE OF APPROPRIATE NATIVE VEGETATION

MODEL ORDINANCE CONTENTS

Sec. 1. Title

Sec. 2. Purpose and Intent

Sec. 3. Definitions

Sec. 4. Applicability

Sec. 5. Exemptions

Sec. 6. Minimum Appropriate Native Vegetation Required

6.1 Public Property

6.2 Private Property

6.3 Unavailability of Native Vegetation

Sec. 7. Invasive Plant Species Prohibition. Public Nuisance Declared.

Sec. 8. Limits on Weed Control Laws

Sec. 9. Protection of Rare, Threatened, and Endangered Plants

Sec. 10. Landscape Plan Requirement and Approval

10.1 Single-Family Residence Landscape Plan Requirements

10.2 Multi-Family, Commercial, Industrial, or Municipal Landscape Plan Requirements

Sec. 11. Landscaping Requirements

11.1 Single Family Residential

11.2 Multi-Family Residential

11.3 Commercial

11.4 Industrial

11.5 Municipal

Sec. 12. Turf Grass Exception

Sec. 13. Landscape Plan Review Criteria

Sec. 14. Landscape Maintenance

Sec. 15. Modification of Existing Landscaping

Sec. 16. Land Clearing

Sec. 17. Tree Protection During Construction and Land Clearing

Sec. 18. Tree Replacement and Mitigation Bank

Sec. 19. Financial Assurances

Sec. 20. Variance Procedures

Sec. 21. Enforcement

Sec. 22. Incentive Program

Sec. 23. Appeals to City Council

Sec. 24. Fees

Sec. 25. Landscape Manual

Sec. 26. Education

Sec. 27. Landscape Committee

Sec. 28. Conflicting Regulations Repealed

Sec. 29. Severability

Sec. 30. Effective Date

The annotated language in italics is intended to provide rationales for some of the provisions, alternative drafting options, and examples of communities that have implemented similar provisions. The language in italics therefore is not part of the official language that would be adopted if the ordinance were enacted.

**MODEL LANDSCAPE ORDINANCE PROMOTING THE USE OF APPROPRIATE
NATIVE VEGETATION**

ORDINANCE NO. _____

**AN ORDINANCE OF THE CITY OF SABALVILLE,²⁴
FLORIDA, TO ADOPT NEW LANDSCAPE REGULATIONS
THAT PROMOTE THE USE OF APPROPRIATE NATIVE
VEGETATION.**

BE IT ENACTED BY THE PEOPLE OF THE CITY OF SABALVILLE:

Sec. 1. TITLE.

This chapter shall be known and may be cited as “City of Sabalville Landscape Ordinance Promoting the Use of Appropriate Native Vegetation.”

Sec. 2. PURPOSE AND INTENT.

The purpose of these regulations is to establish minimum standards for the design, installation, and maintenance of landscaped areas that require the use of appropriate native vegetation and to promote the preservation of indigenous plant communities on site. The City recognizes the significant benefits of establishing and protecting appropriate native vegetation and, therefore, the necessity to maximize the use of appropriate native vegetation in all public and private landscaped areas within the City. It is the intent of this ordinance that these minimum landscape requirements be incorporated in order to promote the public health, safety, and welfare by:

- (1) protecting and promoting appropriate native vegetation;
- (2) promoting microhabitats in urban areas for the conservation of wildlife by establishing new wildlife habitat and maintaining existing wildlife habitat;²⁵
- (3) creating larger, more connected plant populations, helping ensure the future of native plant species by increasing their ability to migrate in response to changes in climate;²⁶

²⁴ Sabalville represents a fictitious community in Florida.

²⁵ ENVIRONMENTAL PROTECTION AGENCY (EPA), LANDSCAPING WITH NATIVE PLANTS FACTSHEET. Available at <http://www.epa.gov/glnpo/greenacres/nativeplants/factsht.html#Native%20Plant>.

- (4) conserving scarce water resources by promoting water-efficient landscaping through the use of appropriate native plants which, once established, typically require much less water than other species;²⁷
- (5) reducing the use of chemical fertilizers and pesticides to maintain landscaping²⁸;
- (6) reducing the negative impacts of landscape maintenance on local air quality;²⁹
- (7) reducing the negative impacts on the land from the use of inappropriate vegetation and poorly planned landscaping;
- (8) reducing the financial costs of landscape maintenance;³⁰
- (9) encouraging creative landscaping designs that further the above stated goals; and
- (10) providing for wildfire protection through the appropriate placement of highly-flammable native plants or protecting structures from wildfire by removing or reducing the volume of highly-flammable native plants within 30 feet of the structure.³¹

The purposes section increases the legal defensibility of the ordinance by substantiating that the regulations of the ordinance are warranted exercises of the police power by governments for the protection of the public health, safety and welfare. Specific purposes and intent should be custom tailored to the individual municipality with respect to its needs, resources, environmental conditions, and reasons for adopting the ordinance.

²⁶ THE INSTITUTE FOR REGIONAL CONSERVATION, NATIVES FOR YOUR NEIGHBORHOOD. Available at <http://www.regionalconservation.org/beta/nfyn/about.asp>.

²⁷ *Id.* Many species of sod and grass require significant amounts of water for irrigation, as much as 30% of water consumption on the east coast and 60% on the west, while native plants require less water and often contribute to decreased water runoff. *Id.*

²⁸ *Id.* "Vast amounts of fertilizers are applied to lawns. Excess phosphorus and nitrogen (the main components of fertilizers) run off into lakes and rivers causing excess algae growth. This depletes oxygen in our waters, harms aquatic life and interferes with recreational uses." *Id.* In addition, lawns require over 70 million pounds of pesticides each year nationwide. Rivers and lakes become contaminated with pesticides, as well as cause harm to people through degraded water quality. *Id.*

²⁹ According to the EPA, "Natural landscapes do not require mowing. Lawns, however, must be mowed regularly. Gas powered garden tools emit 5% of the nation's air pollution. Forty million lawnmowers consume 200 million gallons of gasoline per year. One gas-powered lawnmower emits 11 times the air pollution of a new car for each hour of operation. Excessive carbon from the burning of fossil fuels contributes to global warming. Native plants sequester, or remove, carbon from the air." EPA, LANDSCAPING WITH NATIVE PLANTS FACTSHEET. Available at <http://www.epa.gov/glnpo/greenacres/nativeplants/factsht.html#Native%20Plant>. Therefore, a goal of this model ordinance is to reduce the amount of mowing required for landscape maintenance in order to reduce the negative impacts of this pollution on the local air and environment.

³⁰ According to one study, over twenty years, the costs to maintain a native prairie or wetland is \$3,000 versus \$20,000 for non-native turf grasses. *Id.*; In a cost comparison study in Florida of initial landscape planting comparing two 60' x 180' plots, one non-native landscape with St. Augustine grass lawn and one native plant landscape with lawn substitute, the cost for initial planting of the native landscape was \$5,615 compared to \$8,358 for the non-native landscape. See Presentation, Karina Veaudry, "Cost Comparison for Initial Landscape Planting." In a cost comparison for life cycle cost per year study of the same plots, the total cost for the non-native landscape was \$1,680 compared to \$300 for the native landscape. *Id.*

³¹ See e.g., Florida Department of Community Affairs and Florida Department of Agriculture and Consumer Services, *Wildfire Mitigation in Florida: Land use planning strategies and best development practices* (April 2004). This manual is a guide for communities in Florida to reduce their wildfire risk, including a chapter devoted to landscaping for wildfire mitigation. *Id.*

Sec. 3. DEFINITIONS.

- (a) Appropriate Native Vegetation: vegetation found in the natural community that is suited to the soil, topography, hydrology, and wildfire risk of a particular site.

Defining native vegetation as “appropriate” recognizes that some plant species are only native to a very small or restrictive habitat type and particular region, rather than arbitrary political boundaries. Therefore, it may be inappropriate for some native plants to be planted outside of these specific habitats or communities.³² In addition, some appropriate native vegetation may present wildfire risks when planted too close to a structure.³³

- (b) Community Garden: a public or community use area intended for the purposes of gardening³⁴

- (c) Community Play Area: public use areas, including school and athletic fields, composed of predominantly turfgrass intended for use for recreational purposes³⁵

- (d) Endangered Plant: any plant species which is in danger of extinction throughout all or a significant part of its range³⁶

*[*Note: May incorporate by reference in this definition a list of endangered plants that is periodically updated]*

- (e) Caliper: a measurement of the size of a tree equal to the diameter of the trunk six (6) inches from the root ball³⁷

- (f) Highly-flammable plant: a plant species that has characteristics which make it more volatile by encouraging easy ignition and the spread of fire through its foliage due to low moisture content, dense dry leaves, needles, grass-like leaves, or volatile resins and oils

- (g) Indigenous Plants: those species of plants naturally occurring within a specific habitat or biogeographical region prior to significant human impacts³⁸

- (h) Invasive Plant: a plant reproducing outside its native range and outside cultivation that disrupts naturally occurring native plant communities by altering structure, composition,

³² Pais, D. 1994. Toward a Working Definition of “Florida Native Plant” *The Palmetto*, 14(3), 17. Available at <http://www.fnps.org/palmetto/v14i3p17pais.pdf> (July 6, 2002).

³³ Florida Department of Community Affairs and Florida Department of Agriculture and Consumer Services, *Wildfire Mitigation in Florida: Land use planning strategies and best development practices* (April 2004).

³⁴ See American Community Gardening Association, at <http://www.communitygarden.org/>.

³⁵ Adapted from the definition of “Community Play Area” adopted by the Sarasota County Water Efficient Landscape Ordinance, Ordinance 2001-081.

³⁶ See The Endangered Species Act of 1973, definition of an “endangered species,” 16 U.S.C. § 1532(6).

³⁷ Definition from Orange County Code, Landscaping, Buffering, and Open Space §24-2.

³⁸ Id.

natural processes or habitat quality.³⁹ Invasive plants are those plants recognized on the State of Florida's Noxious Weed and Invasive Plants List (FLA. ADMIN. CODE r. 5B-57.007).

*The State of Florida, pursuant to Florida statute section 581.091(4), requires that a local government adopting an ordinance or regulation on or after March 1, 2002 for the purposes of identifying noxious weeds, invasive plants, or plants deemed to be a public nuisance or threat shall only adopt the Noxious Weed and Invasive Plant List provided by the State (FLA. ADMIN. CODE r. 5B-57.007). All local government ordinances or regulations adopted before March 1, 2002, however, remain in effect. The official State list of noxious weeds and invasive plants is reviewed once every two years by the Department of Agriculture and Consumer Services, in conjunction with the Institute of Food and Agricultural Sciences at the University of Florida.⁴⁰ The Department will propose classification of a plant as a noxious weed or invasive plant and consider including it on the official State List "if the plant is determined to be a serious agricultural threat in Florida, or has a negative impact on the plant species protected under Florida statute section 581.185 [Preservation of Native Flora of Florida], or if the plant is a naturalized plant that disrupts naturally occurring native communities."⁴¹ All plants listed in Florida statute section 369.251 (*Melaleuca quinquenervia*, *Schinus terebinthifolius*, *Casuarina equisetifolia*, *Casuarina glauca*, and *Mimosa pigra*) shall be included in the Department's Noxious Weed and Invasive Plant List.⁴²*

- (i) Landscaped Area: the entire parcel less the building footprint, driveway, non-irrigated portions of parking lots, hardscapes such as decks and patios, and other non-porous areas. Water features are included in the calculation of landscaped areas.⁴³
- (j) Landscaping: any combination of living plants and non-living landscape material (such as rocks, pebbles, sand, mulch, walls, fences, or decorative paving materials)⁴⁴
- (k) Landscape Category: areas of the City are divided into landscape categories based upon their similar soil, topography and hydrology. Since lands within one category will have similar soil, topography, and hydrology features, the same species of native plants that are appropriate at one site are likely to be appropriate native plants to all lands within the same landscape category.⁴⁵

The purpose of the "Landscape Category" is to provide landowners with a general idea of which native plants are appropriate for their particular site. A list of appropriate plants for each category will be included in the landscape manual,

³⁹ FLA. ADMIN. CODE r. 5B-57.001(9).

⁴⁰ FLA. STAT. 581.091 (2004).

⁴¹ FLA. ADMIN. CODE r. 5B-57.010.

⁴² FLA. ADMIN. CODE r. 5B-57.001(9).

⁴³ Jacksonville Landscape and Tree Protection Regulations, §656.1203(o).

⁴⁴ Definition adapted from the Draft "Florida Friendly Landscape Model Ordinance," February 14, 2002.

⁴⁵ See e.g., Native plants to plant by area in Florida, available at http://www.fnps.org/pages/plants/landscape_plants.php

referenced in section 25. These lists will be particularly useful for single-family residential land owners who may not wish to hire a landscape professional to design their appropriate native landscape.

- (l) Native Plant: those species of plants occurring within the city boundaries prior to European contact, according to best scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural associations in habitats that existed prior to significant human impacts and alterations of the landscape.

[Note: May incorporate by reference in this definition a list of native plants, by landscape category that is periodically updated]

Defining what constitutes a “native” plant species is often complicated and critically impacts the application and policy goals of this ordinance. The above definition adopted by the Florida Native Plant Society (FNPS) for a “Florida Native Plant”⁴⁶ is the best definition to use for a landscape ordinance promoting the use of appropriate native vegetation because it relies more on natural associations of indigenous plants than political boundaries. First, the definition refers to those species found prior to European contact, an event that marks a radical transformation in native habitats and species due to human interference. In addition, the definition recognizes that to be native to an area the species must be indigenous to the specific habitat or biogeographical region rather than merely to an arbitrary political boundary, such as an entire state or city. (See Appendix A for a list of other currently used definitions of “native plant” that do not completely address both of these issues)

- (m) Natural Community: a distinct and recurring assemblage of populations of plants, animals, fungi and microorganisms naturally associated with each other and their physical environment, as described in the *Guide to the Natural Communities of Florida* (available from Florida Department of Natural Resources at <http://www.fnai.org/descriptions.cfm>).
- (n) Natural Area: an area on a site that contains natural vegetation and that will be undisturbed during development and will remain undisturbed when the property is fully developed
- (o) Rare Plant: a scarce plant species that may or may not have been designated with a legally protected status such as “threatened” or “endangered.” Some rare plants naturally occur less frequently than other plants, which makes the rare plants more susceptible to decline or extinction.⁴⁷

*[*Note: May incorporate by reference in this definition a list of rare plants that is periodically updated]*

⁴⁶ Id.

⁴⁷ See Linda McMahan, Comment, Legal Protection for Rare Plants, 29 Am. U. L. Rev. 515, 515 n.1 (1980); See also Kevin E. Regan, *The Need for a Comprehensive Approach to Protecting Rare Plants: Florida as a Case Study*, 44 NAT. RESOURCES J. 125 (2004).

- (p) Remove: to transport a native plant from the premises on which it has been growing⁴⁸
- (q) Threatened Plant: any plant species that is likely to become an endangered plant within the foreseeable future throughout all or a significant portion of its range⁴⁹

*[*Note: May incorporate by reference in this definition a list of threatened plants that is periodically updated]*

- (r) Tree: a self-supporting woody plant having a single trunk or a multi-trunk of lower branches, growing to a mature height of at least twelve (12) feet⁵⁰

The height requirement for what constitutes a "tree" may vary depending on the locality of the community.

- (s) Turfgrass: continuous plant coverage consisting of a grass species that is mowed to maintain an established height

** Note: For many of the definitions listed above, it may be beneficial to refer to a list of plants, which is periodically updated to provide certainty to an applicant as to which species of plants are included under a particular definition. Incorporating a reference by name rather than a specific listing of plants in the ordinance itself allows for the list to be updated easily without changing the ordinance. The limitation of incorporating a specific reference list is that plants not on the reference list or not yet updated are excluded from the definition under the ordinance. It is necessary, therefore, that the reference listed be one that is comprehensive and regularly updated.*

Sec. 4. APPLICABILITY.

This ordinance shall be a minimum standard and shall apply to all newly developed public and private buildings, developments, and land within the incorporated areas of the City. This ordinance shall also apply to the expansion or renovation of any existing development when the expansion or renovation of the existing development is equal to fifty percent (50%) of the assessed value of the lot improvements according to the Property Appraiser or when the total square footage of a structure is expanded by fifty percent (50%) or greater.

This section describes how the law applies in the local community. As drafted, this model ordinance will apply to all zoning districts defined within the community's zoning laws, including residential properties. Some landscape ordinances limit their applicability by listing express exemptions in the applicability or scope sections, e.g. exemptions for single-family dwellings or for all residential zoning districts. By making this ordinance applicable to everyone,

⁴⁸ City of Scottsdale, Arizona, Native Plant Ordinance, City Code, §46-105.

⁴⁹ See definition of a "threatened species," 16 U.S.C. §1532(20).

⁵⁰ Jacksonville Landscape and Tree Protection Regulations, §656.1203(gg).

the community will further the goals of the ordinance as defined in Section 2, Purposes and Intent, and greatly expand the areas in the community that will be fully landscaped with appropriate native vegetation.

Sec. 5. EXEMPTIONS.

These exemptions do not authorize the use of Invasive plant species, which are prohibited by section 7 of this ordinance.

The following areas are exempt from this ordinance:⁵¹

- (1) community gardens;
- (2) community play areas;
- (3) non-invasive food plants on residential properties;

This exemption would allow homeowners to plant vegetable gardens or fruit trees on their property.

- (4) golf course play areas;

*Consideration could be given to restricting the use of non-native vegetation to fairways and greens. There are nongovernmental certification programs for golf course best management practices that encourage the use of native vegetation.*⁵²

- (5) turfgrass in stormwater management areas;
- (6) turfgrass in public rights-of-way;
- (7) agricultural lands;⁵³
- (8) scientific and educational purposes;⁵⁴ and

⁵¹ Adapted from the Sarasota County Water Efficient Landscape Ordinance, Ordinance No. 2001-081.

⁵² Audubon International, Audubon Cooperative Sanctuary Programs for Golf, *Available at* <http://www.audubonintl.org/programs/acss/golf.htm>.

⁵³ The Florida Right to Farm Act, Florida statute section 823.14(6), provides that “a local government may not adopt any ordinance, regulation, rule, or policy to prohibit, restrict, regulate, or otherwise limit an activity of a bona fide farm operation on land classified as agricultural land pursuant to s. 193.461, where such activity is regulated through implemented best-management practices or interim measures developed by the Department of Environmental Protection, the Department of Agriculture and Consumer Services, or water management districts and adopted under chapter 120 as part of a statewide or regional program.” *Id.* Agricultural lands are classified under Florida statute section 193.461 as “only lands which are used for bona fide agricultural purposes.” *Id.* “Bonafide agricultural purposes” is defined as “good faith commercial agricultural use of the land.” FLA. STAT. § 193.461(3)(b). There are seven factors which are used to determine whether the use of the land for agricultural purposes is “bonafide:” 1) the length of time the land has been so utilized; 2) whether the use has been continuous; 3) the purchase price paid; 4) size, as it relates to specific agricultural use; 5) whether an indicated effort has been made to care sufficiently and adequately for the land in accordance with accepted commercial agricultural practices, including, without limitation, fertilizing, liming, tilling, mowing, reforestation, and other accepted agricultural practices; 6) whether such land is under lease, if so, the effective length, terms, and conditions of the lease; and 7) other such factors as may from time to time become applicable. *Id.*

⁵⁴ This exemption would allow, for example, for botanical gardens. It should be noted that in the past botanical gardens have been responsible for the release of Invasive species, some of which have had significant negative biological and economic impact. *See e.g.*, <http://www.centerforplantconservation.org/invasives/codesN.html>.

(9) cemeteries

The City shall, however, encourage the protection and promotion of appropriate native vegetation in these areas to the maximum extent practicable.

The purpose of these exemptions is to allow uses that could be restricted by the appropriate native vegetation requirement. In these areas, however, appropriate native vegetation should be used in landscaping unless there is no appropriate native plant that will serve the intended use of the area.

Sec. 6. MINIMUM APPROPRIATE NATIVE VEGETATION REQUIRED.**Sec. 6.1. Public Property.**

The City shall require the use of only appropriate native vegetation in all newly-developed, publicly-owned landscaped areas within the City limits. The City shall encourage the use of appropriate native vegetation in all existing landscaped areas, while recognizing that any plant in the proximity of structures may create a wildfire hazard.

Sec. 6.2. Private Property.

The City shall require a minimum coverage of appropriate native vegetation in all newly landscaped private areas, as set forth in section 11 of this ordinance. However, at no time shall the minimum coverage of appropriate native vegetation be less than ____ %.

The recommended minimum percentage is 50%. A recommended maximum percentage is 90%.

Sec. 6.3. Unavailability of Appropriate Native Vegetation.

In the event that appropriate native vegetation is not available at the time of installation, the landowner may substitute appropriate non-native vegetation.

This model ordinance recognizes the importance of expanding the use of appropriate native vegetation by requiring their 100% use in all newly-landscaped publicly owned areas and requiring a minimum level of appropriate native vegetation that must be used in all newly landscaped private areas. The minimum landscaping requirements for private areas promotes the use of appropriate native vegetation but also allows land owners the ability to plant noninvasive, non-native vegetation. The minimum landscaping requirements are set forth by zoning category in section 11 of this model ordinance. The purpose of the 100% use requirement for all newly landscaped publicly owned areas is that

Voluntary codes of conduct have been developed to address ethical and scientific issues associated with the introduction of exotic plants. *Id.*

local governments should lead by example, as well as to achieve the benefits of native landscaping as set forth in section 2 of this model ordinance.

The Florida Native Plant Society (FNPS) recommends and encourages the maximum use of appropriate native vegetation and protection of existing native vegetation in all landscaped areas; however, in light of the economic and feasibility burdens put on land owners by the potential unavailability of native plant material in local nurseries, FNPS, at this time, does not recommend a 100% native vegetation requirement for private properties.

An alternative way that some ordinances seek to provide protection for native plants is by requiring that a minimum set percentage of vegetation at a site be native.⁵⁵ The recognized benefits of landscaping with only appropriate native vegetation warrant the 100% use requirement for newly landscaped publicly owned areas and the promotion of appropriate native vegetation through minimum requirements for newly landscaped areas. A local government should provide incentives for promoting the use of appropriate native vegetation in existing landscaped areas and encouraging their maximum use in newly landscaped private areas (See, for example, incentives provided in section 22 of this model ordinance).

Some communities are already providing significant protection for and promoting native plants. The city of Scottsdale, Arizona, for example, has implemented a "Protection of Native Plants" ordinance to preserve the unique character of native plants in the Sonoran Desert, determining that the presence of native plants contributes to the aesthetic and economic well-being of their community. The ordinance requires that "No person shall destroy, mutilate, remove from the premises, or relocate to another place on the premises any protected native plant existing within the city without first obtaining a native plant permit from the city."⁵⁶

Sec. 7. INVASIVE PLANT SPECIES PROHIBITION. PUBLIC NUISANCE DECLARED. SURVEY REQUIRED FOR NEW DEVELOPMENT.

The City declares that Invasive species are a public nuisance that degrade landscaped and natural areas. The City shall prohibit the planting of any Invasive plant species in all public and private properties. The city may require the owner of the property to remove any Invasive species that the city deems to be a public nuisance pursuant to the procedures set forth below.

This is a critical section because the invasion of non-indigenous species causes "ecological, economic, and resource management problems."⁵⁷ Florida is one the

⁵⁵ For example, the City of Sanibel requires 75% of newly landscaped areas to be native vegetation. City of Sanibel Landscape Ordinance, Art. II, Sec. 122-49, 122-73.

⁵⁶ City of Scottsdale, Arizona, Native Plant Ordinance, City Code, Chapter 46, Article V.

⁵⁷ U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, HARMFUL NON-INDIGENOUS SPECIES IN THE UNITED STATES (1993).

most severely impacted states experiencing the harmful effects of non-indigenous invasive species.⁵⁸ Invasive species have reduced biological diversity, caused severe ecological and economic impacts, displaced indigenous wildlife (particularly endangered and threatened species), altered natural ecosystems, and impaired navigational and recreational activities.⁵⁹

In the model ordinance, Invasive species are identified as a “public nuisance.” A “public nuisance” is defined in the law as “an unreasonable interference with a right common to the general public, such as a condition dangerous to health, offensive to community moral standards, or unlawfully obstructing the public in the free use of public property.”⁶⁰ Because Invasive species are likely to spread rapidly from the subject property into surrounding natural and landscaped properties and degrade them, they appear to fit well within the definition of a “public nuisance.” Florida case law gives the state and local governments the authority, under their police powers to protect public health, safety, and welfare, to regulate private property to prevent public harm.⁶¹ One of the earliest cases in Florida recognized, “All property is owned and used subject to the laws of the land. Under our system of government, property may be used as its owner desires within the limitations imposed by law for the protection of the public and private rights of others.”⁶² Examples of other areas where public nuisance law has been applied in Florida include preventing pollution,⁶³ enjoining operation of horse tracks or betting facilities,⁶⁴ and the removal of crack houses or houses of prostitution.⁶⁵

Many local governments already have existing procedures for abatement of public nuisances in a general nuisance ordinance. Where this is the case, these can be incorporated by reference in the section declaring Invasive plants as a public nuisance. When a local government has no existing procedures for abatement of a public nuisance, the following subsections, adapted from the City of Gainesville’s public nuisance ordinance,⁶⁶ outline the basic contents.

- (a) The city manager or the city manager’s designee has authority to declare as a public nuisance a property previously found to be in violation of this ordinance if the owner of the property has not corrected the violation within the thirty (30) days provided by this ordinance.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Black’s Law Dictionary, 2nd edition.

⁶¹ See *Hav-A-Tampa Cigar Co. v. Johnson*, 5 So. 2d 433 (Fla. 1941), *Sheip Co. v. Amos*, 130 So. 699 (Fla. 1930), and *Pompano Horse Club, Inc. v. Bryan*, 11 So. 801 (Fla. 1927); See also Ellen Avery, *Terminology of Florida’s New Property Rights Law: Will it allow equity to prevail or government to be “taken” to the cleaners?*, 11 J. LAND USE & ENVTL. L. 181 (1995).

⁶² *Cason v. Florida Power Co.*, 76 So. 535 (Fla. 1917).

⁶³ See e.g., *National Container Corp. v. State ex rel. Stockton*, 189 So. 4 (Fla. 1939) (recognizing a right based on private and public nuisance law to prevent an environmental nuisance from a paper mill polluting a local river)

⁶⁴ See e.g., *Pompano Horse Club, Inc. v. Bryan*, 11 So. 801 (Fla. 1927).

⁶⁵ See e.g., *Demetree v. State ex rel. Marsh*, 89 So. 2d 498 (Fla. 1956).

⁶⁶ City of Gainesville Code of Ordinances, Ch. 30, Article 5.

Certain minimum requirements are necessary to create both an effective and constitutionally-sound ordinance. The following four subsections provide for procedural safeguards and enforcement provisions. These include notice, a right of the property owner to cure the violation of the ordinance, the right to a quasi-judicial hearing, and the right of a local government to abate a nuisance and charge the property owner.

(b) Notice

- (1) After declaration of a public nuisance due to invasive plants, the city manager or his or her designee shall provide notice to the owner of the affected property.
- (2) The notice shall include the date of the declaration, the date of the previous and uncorrected violation of this ordinance, the name or names of the invasive plants giving rise to the declaration, notification that the property owner may contest the declaration of a nuisance by requesting a hearing within 15 days of the declaration of nuisance, and information on how to request a hearing.

(c) Right of Property Owner to Cure the Nuisance

The owner of a property with Invasive species that have been declared a public nuisance shall have thirty (30) days after receipt of notice to eliminate the Invasive plants.⁶⁷

(d) Right to a Hearing to Contest Designation of a Nuisance

Owners of a property declared a public nuisance have the right to a hearing to contest the declaration of a public nuisance. At the conclusion of the hearing and after considering all evidence presented at such hearing, the board is authorized to issue findings of fact

⁶⁷ One way that a local government can assist citizens with the removal of Invasive vegetation is through local government removal programs or cost-share programs where the local government may help to remove the invasive vegetation with a cost-share fee paid by the landowner. The City of Palm Beach, for example, has a removal program for Australian Pine and Melaleuca and a cost share program for seven other invasive non-native species with a minimal cost-share, no greater than \$500, to be paid by the landowner. See Matthew King, *Exotic Removal Incentives Approved*, ENVTL. TIMES (2003); City of Palm Beach Prohibited Invasive Non-Native Vegetation Removal Ordinance, Art 14-Environmental Standards, Appendix 12 Incentive Programs.

based upon the evidence presented and made part of the record that a public nuisance does not exist or that an unlawful public nuisance does exist.

(e) **Local Government May Abate Nuisance, Charge Owner, and File a Lien**

Should a property owner fail to correct a violation of this ordinance within either thirty (30) days of a declaration of nuisance or thirty (30) days after conclusion of a hearing to contest a declaration of nuisance, if one was requested, the City may enter the property and abate the public nuisance.

- (1) All costs incurred by the City in abatement of a nuisance on private property may be charged to the owner of the property. A copy of these costs and other costs authorized to be levied against a property owner may be filed in the public records.
- (2) Should the property owner fail to pay the City's expenses incurred in abatement of the nuisance within thirty (30) days of billing by the City, the City may file a certified copy of the City's expenses to abate the nuisance and other expenses authorized in subsection (3) below in the public record. Such a filing then shall constitute a lien on the property.
- (3) When billing a property owner for abatement costs the City may also include any previously levied fines for violation of this ordinance and all charges—including reasonable attorney's fees—incurred by the City in a hearing contesting the declaration of nuisance if the hearing results in a finding of a nuisance.

One year from the filing in the public record of a lien on a property under this subsection, the City may foreclose on the property to satisfy the lien.⁶⁸

(f) **Invasive Species Survey Required for New Development.**

For all properties submitting a landscape plan pursuant to Section 10, other than single family residences, the landowner or their representative shall submit with the landscape plan a survey indicating the presence of Invasive species.

Sec. 8. LIMITS ON WEED CONTROL LAWS.

⁶⁸ It should be noted that no real property which is a homestead under Section 4, Article X of the State Constitution shall be foreclosed for a lien originating from a violation of this ordinance. In Florida, the state constitution provides protections against foreclosures for liens such as the one created here. Local governments in other states must also include provisions exempting homesteads when required.

No regulation shall be made by the City or any person, community, or group which makes the planting, maintenance, or protection of appropriate native vegetation illegal or encourages the removal of appropriate native vegetation, except when deemed necessary for public safety.⁶⁹

This ordinance seeks to make any barrier to the planting or protection of appropriate native vegetation illegal. This provision expressly prohibits any group from creating "weed control laws" that would prohibit a homeowner from creating a natural landscape using native plants on their property based on aesthetic preferences.⁷⁰ Natural landscaping using native plants shall not be considered the same as a neglected property on the basis that it does not use traditional lawn landscaping.

There are a few cases that upheld the right of a homeowner to use natural landscaping in the face of a weed law challenge. In City of New Berlin v. Hagar (1976), a Wisconsin judge ruled that natural landscaping did not affect neighbor's property values and the weed law in question was in violation of the Equal Protection Clause because its factual basis was too weak.⁷¹ In Montgomery County, Maryland v. Stewart (1987), homeowners defended their natural landscape against challenges by the City and neighbors, obtaining a change in the weed law to allow meadows with adequate buffers as long as all noxious weeds were removed.⁷² In Little Rock, Arkansas v. Allison (1988), a home owner defended her natural landscape, considered a natural wildlife area by the Arkansas Game and Fish Commission, against a City code prohibiting "grass, weeds, or any other plant that is not cultivated" to grow higher than 10 inches or "in rank profusion on the premises."⁷³ In Palm Beach County, Florida, home owners saved their native trees and self-mulching pine needle yard from the County lot clearing ordinance that required clearing of all "uncultivated vegetation" by appealing to the Environmental Control Hearing Board, with the help of the Florida Audubon Society, Florida Native Plant Society, and several neighbors, to have the county ordinance rewritten to exclude native vegetation from the county lot clearing ordinance.⁷⁴

Sec. 9. PROTECTION OF RARE, THREATENED, AND ENDANGERED PLANTS.

⁶⁹ Public safety reasons include recommendations of the local fire service having jurisdiction or necessity to clear out condemned lots that present public safety hazards, such as crack houses.

⁷⁰ For a discussion of Natural Landscaping and challenges to weed laws, see "Green Landscaping with Native Plants: Weed Laws," John Marshall Law Review, Vol. 26, No. 3 (1993). Available at <http://www.epa.gov/glnpo/greenacres/weedlaws/JMLR.html#INTRODUCTION>.

⁷¹ City of New Berlin v. Hagar, No. 33582 (Wis. Cir. Ct. Waukesha Cty. Apr. 21, 1976).

⁷² Montgomery County, Maryland v. Stewart, SW-87-2056 (Montgomery County, Md. Circuit Court, 1987).

⁷³ Little Rock, Arkansas v. Allison, No. 89-10401, slip op. (Little Rock Mun. Ct. 1989); Telephone Interview with Lyndae Allison (Apr. 15, 1993).

⁷⁴ See Wesley Starr, *Land Clearing Ordinance Defeated*, THE PALMETTO (Florida Native Plant Soc'y, Orlando, Fla.), Spring 1990, at 13.

For all properties submitting a landscape plan pursuant to Section 10 of this ordinance, other than single family residences, the landowner or their representative shall submit with the landscape plan a survey indicating the presence of state and federally listed threatened and endangered plants including species of special concern. A land owner who provides protection and maintenance in perpetuity for all or a percentage of existing rare, threatened, and endangered plants at the site as set forth in the landscape plan, and does not dig up or disturb the natural placement of any such plant at the site, shall be eligible, at the discretion of the appropriate local government staff,⁷⁵ to receive:

- (a) expedited landscape plan review;
- (b) a waiver from any fees required by this ordinance;
- (c) variances from the landscape requirements of Section 11 of this ordinance to the extent necessary for flexible landscape planning around existing rare, threatened, or endangered plants; and
- (d) a certificate of recognition as a "City of Sabalville Rare, Threatened, and Endangered Plant Conservation Site."

The purpose of this section is to provide protection for rare, threatened, and endangered plants in their natural settings by providing incentives for landowners to leave existing plants in place at a site and to discourage the removal or relocation of any such plants. Some communities, like Scottsdale, Arizona, have gone further and prohibited the removal of listed species and created a permitting process to authorize their removal.⁷⁶ The community can maintain a public register of the "Rare, Threatened, and Endangered Plant Conservation Sites," preferably published on a community landscape or development planning website, other community website, or other prominent place in the community. This program will be a particular incentive for local businesses that can advertise their conservation status to attract environmentally-conscious customers and show their concern for the local environment. Rare, threatened, and endangered plants currently receive very little protection under existing laws; therefore, protective programs such as that provided by this section are essential.

Under federal regulation, the Endangered Species Act (ESA)⁷⁷ provides limited protection for plants, especially for plants not located on federal lands. The U.S. Fish and Wildlife Service (USFWS) lists species of plants as "Endangered" or "Threatened" under Section 4 of the ESA.⁷⁸ Under Section 7 of the ESA, all federal agencies are required to consult with USFWS to determine if their actions are "likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of such species' critical habitat.⁷⁹ The "taking"⁸⁰ of any such plant, under Section 9 of

⁷⁵ "Appropriate local government staff" is a general term which should be replaced by the term used by a particular local government to identify the staff who review and either approve or deny landscape plans.

⁷⁶ City of Scottsdale Native Plant Ordinance, Ch. 46, Art. V.

⁷⁷ Endangered Species Act of 1973, 16 USC §1531 [hereinafter, ESA].

⁷⁸ ESA, 16 USC §1533.

⁷⁹ ESA, 16 USC §1536.

the ESA, is only prohibited on federal lands,⁸¹ and even then, only considered a “taking” when a plant is removed and reduced to possession.⁸² Section 9, therefore, provides no protection for destruction of plants on federal lands where the plant is not reduced to possession.⁸³ Endangered or threatened plants not on federal lands receive the least protections. Section 9 only prohibits the removal of listed plants when in knowing violation of state law.⁸⁴ This means that if there are no state laws to the contrary, private landowners are free to destroy any endangered or threatened plant on their property. A 1998 study confirmed that “plants that depend on private property for their habitat do not fare well, and fare much worse in states that do not restrict private landowners.”⁸⁵

Under Florida law, state protection for threatened and endangered plants is provided by the Preservation of Native Flora of Florida⁸⁶ statute (PNFFS) and the related Endangered Plant Advisory Council⁸⁷ statute (EPAC). The PNFFS lists plant species that are “native to the state that are endangered, threatened, or commercially exploited,” and its goal is to protect native flora from unlawful harvesting on public and private land.⁸⁸ The PNFFS broadens the categories of regulated plants further than the ESA with the addition of “commercially exploited species” which are defined as “species native to the state which are subject to being removed in significant numbers from native habitats in the state and sold or transported for sale.” The list of endangered, threatened, and commercially exploited plants is kept by the Florida Department of Agriculture and Consumer Services (DACS) as the Regulated Plant Index.⁸⁹ The EPACS sets up the committee that considers native plants for inclusion in the Regulated Plant Index. PNFFS provides different levels of protection for plants that are endangered, threatened, or commercially exploited. For endangered plants, PNFFS prohibits willful destruction or harvesting of plants without prior written permission of the landowner and a permit from DACS. However, no permits are required for threatened plants and only for commercial plants when three or more plants are harvested. Under the PNFFS, private landowners may still, as under federal law, destroy plants on their property. The PNFFS does provide some restrictions beyond that provided by federal law on private landowners by requiring a permit for the sale of endangered or commercial exploited plants from their land (threatened plants are not included under this provision). The most

⁸⁰ “Take” is defined in the ESA as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” ESA, 16 USC §1532 (19).

⁸¹ ESA, 16 USC §1538 (a)(2)(B).

⁸² See George C. Coggins & Anne F. Harris, *The Greening of American Law?: The Recent Evolution of Federal Law for Preserving Floral Diversity*, 27 NAT. RESOURCES J. 247, 248 n.2 (1987).

⁸³ *Id.*

⁸⁴ ESA, 16 USC §1538 (a)(2)(B).

⁸⁵ Jeffrey J. Rachlinski, *Protecting Endangered Species Without Regulating Private Landowners: The Case of Endangered Plants*, 8 CORNELL J.L. & PUB. POL’Y 1, 3 (1998).

⁸⁶ FLA. STAT. § 581.185 (2002).

⁸⁷ *Id.* at § 581.186.

⁸⁸ *Id.*

⁸⁹ *Id.*

limiting factor of the PNFFS is that all land development activities and land clearing for agricultural, silvicultural, mining assessment, or fire control purposes are exempt from the statute, providing no protection from these activities that significantly destroy habitat and plants.

Sec. 10. LANDSCAPE PLAN REQUIREMENT AND APPROVAL.

Prior to the issuance of any building permit, a landowner or their representative shall submit a landscape plan to the appropriate local government staff. The staff shall review and either approve or deny the landscape plan.

It is suggested that local government staff complete a follow up inspection to ensure that the landscape installation was completed as per the plan submitted for approval.

The applicant should be required to locate existing native vegetation areas on the landscape plan. Incentives should be given to promote the on-site preservation of native vegetation and native plant communities.

Sec. 10.1. Single-Family Residence Landscape Plan Requirements

A single-family residence shall submit a landscape plan that includes a drawing of the proposed landscaped area, a list of each species of appropriate native plant to be installed, and the quantities of each species of plant to be installed. The landowner should select appropriate native vegetation that is suitable for their landscape category. Single-family residences are not subject to the requirement that a design professional prepare the landscape plan.

This provision only applies to newly landscaped areas or modifications to 50% or greater of the existing landscaped area pursuant to sections 4 and 15.

Sec. 10.2. Multi-family, Commercial, Industrial, or Municipal Landscape Plan Requirements

An applicant for development or modification of a multi-family, commercial, industrial, or municipal site shall submit a landscape plan that is prepared and signed by a registered landscape architect or a Florida Certified Landscape Designer. The landscape plan shall be drawn to scale, including all dimensions and distances, and shall include:

- (1) the names, addresses, and phone numbers of the landowner and landscape designer;
- (2) the parcel number, legal description, and address of the proposed property;
- (3) property lines with dimensions;
- (4) location and dimensions of new and existing buildings and structures;
- (5) graphic symbols for all new and existing vegetation, labeled by name;
- (6) a legend that indicates sizes, quantity, and spacing of all vegetation; and
- (7) a graphic representation of the irrigation system.⁹⁰

⁹⁰ Adapted from, Monterey County Planning and Building Inspection, Checklist for Landscape Plan Submittal, Available at <http://www.co.monterey.ca.us/pbi/howto/landscpchklst.htm>.

A registered landscape architect must meet certain requirements and be registered with the Board of Landscape Architects under Florida statutes section 481.301-329. A local government may choose, however, to allow that these plans, or plans for smaller projects, be prepared by a "certified landscape designer." Qualified professional designer is a broad term that includes unregulated design professionals, as well as registered landscape architects.

Sec. 11. LANDSCAPING REQUIREMENTS.

All landscape applicants shall comply with the guidelines for landscape design provided in the Landscape Manual, pursuant to section 25 of this ordinance, in designing and completely installing all elements of the landscape plan. Where possible, landscape applicants should satisfy these requirements by preserving existing native vegetation on the site. Staff may adjust the requirements of this section for a particular site in circumstances where adjustments are necessary to protect existing native vegetation at the site. The source of all plant material, other than existing native vegetation at the site, shall be from plant nurseries.

This section refers to the minimum landscaping requirements that must be planted with appropriate native vegetation for each zoning category. Pursuant to section 6 of the model ordinance, all newly landscaped private areas shall plant the minimum landscaping requirements of this section with appropriate native vegetation but may in addition to the minimum landscaping requirements plant additional native vegetation or non-invasive non-native vegetation at the site (See 6.2). According to section 6.2, however, at no time shall coverage of native vegetation be less than ____%. (The recommended minimum is 50% to 90%). In addition, the staff or landscape committee may wish to impose species diversity by requiring no more than a certain percentage of groundcovers, shrubs, or trees may be any one species. A minimum number of plant species for groundcovers, shrubs and trees can also be suggested to create species diversity. This could be accomplished in the landscape manual refer to in Section 25. Any additions above the minimum landscaping requirements on publicly owned property shall be only appropriate native vegetation (See 6.1).

The use of appropriate native vegetation in this section is subject to the availability of appropriate native vegetation pursuant to section 6.3. The purpose of specifying the source of the plant material used in landscapes is to prohibit wild collecting of native vegetation from other sites in order to protect existing native vegetation.

The detailed minimum landscaping requirements provide the standards that landscaping plans within each zoning category must satisfy, including preservation of existing native vegetation. A local government should modify these section headings to reflect all current zoning categories in the local government jurisdiction. The subheadings under each zoning category are the general topics that should be covered in a landscape requirements section.

Drafting specific landscape requirements, however, is beyond the scope of these model ordinance guidelines, because particular landscaping requirements provisions can vary by locality and community needs. The number of appropriate native trees, shrubs, and groundcovers will vary depending on the particular landscaping requirements set by the local government. These numbers will also be different for different properties, varying by the area of the lot size. For example, a local government may require a certain number of appropriate native trees, shrubs or groundcover per specified unit of area, therefore larger lots will require that more appropriate native vegetation be planted or preserved. A local government can further promote the use of appropriate native vegetation through the use of incentives (See section 22). In addition, existing laws and ordinances may interact with an adopted landscape code.⁹¹ For example "parking requirements, utility easements, roads, setbacks, drainage, and especially zoning will all affect a property."⁹²

Local governments with landscaping requirements in place should also examine their current requirements to ensure that they do not hinder the goal of promoting and protecting native vegetation. For example, provisions that require a minimum growth height of vegetation within a certain time period may favor non-native plants over native plants that are typically slower growing.

Sec. 11.1 Single-Family Residential**

The minimum landscaping requirements for single-family residential properties shall be fulfilled by appropriate native trees, shrubs, and groundcovers, as specified:

- (1) Buffer and Perimeter Planting
- (2) Interior Planting
- (3) Foundation Planting
- (4) Tree Planting Requirements
- (5) Preservation of Existing Appropriate Native Vegetation*

Sec. 11.2 Multi-Family Residential**

The minimum landscaping requirements for multi-family residential properties shall be fulfilled by appropriate native trees, shrubs, and groundcovers, as specified:

- (1) Buffer and Perimeter Planting
- (2) Interior Planting
- (3) Foundation Planting
- (4) Parking Lot and Street Trees
- (5) Tree Planting Requirements
- (6) Preservation of Existing Appropriate Native Vegetation*

⁹¹ Duane R. Durgee, Alachua County Forester, *Characteristics of Good Tree Protection and Landscape Ordinances*.

⁹² *Id.*

Sec. 11.3 Commercial**

The minimum landscaping requirements for commercial properties shall be fulfilled by appropriate native trees, shrubs, and groundcovers, as specified:

- (1) Buffer and Perimeter Planting
- (2) Interior Planting
- (3) Foundation Planting
- (4) Parking Lot and Street Trees
- (5) Tree Planting Requirements
- (6) Preservation of Existing Appropriate Native Vegetation*

Sec. 11.4 Industrial**

The minimum landscaping requirements for industrial properties shall be fulfilled by appropriate native trees, shrubs, and groundcovers, as specified:

- (1) Buffer and Perimeter Planting
- (2) Interior Planting
- (3) Foundation Planting
- (4) Parking Lot and Street Trees
- (5) Tree Planting Requirements
- (6) Preservation of Existing Appropriate Native Vegetation*

Sec. 11.5 Municipal**

The minimum landscaping requirements for municipal properties shall be fulfilled by appropriate native trees, shrubs, and groundcovers, as specified:

- (1) Buffer and Perimeter Planting
- (2) Interior Planting
- (3) Foundation Planting
- (4) Parking Lot and Street Trees
- (5) Tree Planting Requirements
- (6) Preservation of Existing Appropriate Native Vegetation*

** Within these requirements, a local government should provide provisions for the mandatory preservation of existing appropriate native vegetation at the site. Several counties in Florida require mandatory preservation of canopy, habitat, or upland natural area preservation.⁹³ One way that local governments can protect existing vegetation is by requiring that a set percentage, e.g. 25%, of sites*

⁹³ See Brevard County Natural Resources Management Office, *Florida Counties with Mandatory Canopy, Habitat, or Upland Natural Area Preservation* (December 16, 2003); See also David Schwartz, *Local Government Authority to Protect Upland Habitats*. Presentation at the University of Florida Levin College of Law's Public Interest Environmental Conference (February, 2003); R. Hamann, *et al.*, *Implementation of the Model Land Development Code for Florida Springs Protection* (2004).

containing significant existing native vegetation be set aside as a natural area and left untouched for preservation. Another example of a way to protect existing native vegetation is through permitting for removal of this vegetation. The City of Sanibel, for example, requires a permit for the removal of native trees that are over 6 feet in height (or more than 2 inches in trunk diameter 2 feet from the ground) and native shrub-like plants that are more than two feet in height.⁹⁴

***A local government may choose to add additional requirements for large-scale developments. This is recommended because large-scale developments (e.g. > 20 acres) may have a more significant geographical impact on plant communities. Adding separate landscape requirements may allow, for example, for a requirement to preserve a certain percentage of “natural areas” left untouched by development and protected on the property. One way to accomplish this would be to break down each zoning category into acreage increments. In drafting, for example:*

*Sec. 11.2.a Multi-Family Residential, **Less than 20 Acres***

- (1) Buffer and Perimeter Planting*
- (2) Interior Planting*
- (3) Foundation Planting*
- (4) Parking Lot and Street Trees*
- (5) Tree Planting Requirements*
- (6) Preservation of Existing Appropriate Native Vegetation*

*Sec. 11.2.b Multi-Family Residential, **20 Acres or More***

- (1) Buffer and Perimeter Planting*
- (2) Interior Planting*
- (3) Foundation Planting*
- (4) Parking Lot and Street Trees*
- (5) Tree Planting Requirements*
- (6) Preservation of Existing Appropriate Native Vegetation*
- (7) Protection of Natural Areas*

In the model ordinance, this would be done for sections 11.2-11.5 above.

Sec. 12. TURFGRASS.

Non-native turfgrass shall be considered within the percentage of non-native vegetation permitted. The landowner shall use a low-water use turfgrass that is approved by staff as the most appropriate turfgrass for use in the area. Staff may vary the percentage of turf grass requested by the landowner in the landscape plan.

⁹⁴ City of Sanibel Landscape Code, Art. II, Sec. 122-145, Removal of Native Species.

The local government must determine whether to consider turfgrass within the maximum percentage of non-native vegetation allowed pursuant to Section 6 or to permit an applicant to exceed the requirement to accommodate the use of non-native turf grass.

Sec. 13. LANDSCAPE PLAN REVIEW CRITERIA.

When reviewing a landscape plan, appropriate local government staff, including the City Arborist, may consider the following factors in order to approve or deny a landscape plan:

- (1) whether the landscaping requirements of sections 10 and 11 have been satisfied;
- (2) whether adequate measures have been taken to protect existing appropriate native vegetation at the site;
- (3) whether adequate measures have been taken to protect any existing rare, threatened, and endangered plants at the site;
- (4) the level of appropriateness of the native vegetation chosen for the site based on the soil, topography, hydrology, and flammability of the particular site;
- (5) the diversity of the plants; and
- (6) whether the landscape plan takes into account the area's wildfire risks.

Sec. 14. LANDSCAPE MAINTENANCE.

A landowner is responsible for ensuring that all landscape material that is part of an approved landscape plan regulated by this ordinance is maintained in a healthy condition. Within the first year after the date that the landscape plan has been completely installed, if any native plant that is part of the requirements of this ordinance dies or is substantially damaged, the landowner shall replace the plant with the same landscape material or other appropriate native vegetation as approved by appropriate local government staff.

One year is a common time period used by many landscape ordinances, and generally, a plant that survives the first year of planting will be well established. A local government, however, may choose to implement a more stringent and longer time period during which a land owner would be responsible for replacing any plants that have died or been substantially damaged.

Sec. 15. MODIFICATION OF EXISTING LANDSCAPING.

If a land owner modifies fifty-percent (50%) or greater of the entire landscaped area of an existing landscape plan which was installed prior to the implementation of this ordinance, the land owner shall bring the portion of the landscaped area that is being modified into compliance with the provisions of this ordinance.

This section of the ordinance applies to situations where only the existing landscaped area is being modified by greater than 50%. Section 15 above requires existing landscapes to be brought into compliance with this ordinance when there is greater than 50% renovation or expansion of the existing development, increase in lot improvement value, or structure expansion. This ordinance, however, does not address incremental landscape modifications.

Sec. 16. LAND CLEARING.

No construction shall begin or land shall be cleared until a land clearing permit has been acquired and the landscape plan for the site has been approved according to the provisions of this ordinance.

The two primary purposes for this section are to preserve existing appropriate native vegetation and to provide protection for any rare, threatened, or endangered plants which may be located at the site prior to removal of any existing vegetation. When reviewing the landscape plan, appropriate local government staff may consider the level of appropriateness of the existing native vegetation to the site, whether an adequate amount of the existing appropriate native vegetation has been preserved in the plan, and whether rare, threatened, or endangered plants are protected as required by the ordinance and applicable laws. The failure to adequately preserve appropriate existing native vegetation or protect rare, threatened, or endangered plants as required may be the basis for the denial of a landscape plan. Incentives can be given to encourage the on-site preservation of appropriate existing native vegetation.

Sec. 17. TREE PROTECTION DURING CONSTRUCTION AND LAND CLEARING.

It shall be unlawful for any person to remove, destroy, or permanently damage any existing appropriate native tree that is four (4) caliper inches or larger without first obtaining a Tree Removal Permit from the appropriate local government staff. All existing appropriate native trees designated as remaining in their original placement as a part of the landscape plan shall be protected during construction and land clearing from permanent damage to any part of the tree. A developer shall follow the guidelines for protecting existing native trees during construction and land clearing provided in the Landscape Manual, pursuant to section 25 of this ordinance.

The purpose of this section is to prevent destructive land clearing and construction practices that may leave an existing native tree in its place but so severely damage it that it is no longer a viable tree and will eventually die. Trees are often damaged due to the destruction of roots when installing utilities, spills of harmful materials, and loss of air and water to the roots due to the compacting of soil or fill above the critical root systems.⁹⁵ Some of the ways to protect these trees during construction and land clearing include protecting groups of trees with protective barriers within which construction is prohibited, requiring minimum layers of soil protection such as chip mulch or pine straw where heavy

⁹⁵ Fulton County Tree Preservation Ordinance, "Protecting 'Save' Trees," TREE CITY USA BULLETIN NO. 31.

machinery does have to cut through a protected tree area to prevent compacting of soil and damage to roots, carefully cutting roots to allow for new root growth rather than tearing roots, tunneling utility pipes rather than trenching where they cannot be rerouted around trees, and providing aeration systems over roots that may be covered with pavement or fill.⁹⁶ This section can be amended to expressly list required or suggested methods of protection.

Sec. 18. TREE REPLACEMENT AND MITIGATION BANK.

A landowner who removes any tree from a site shall replace that tree with a replacement tree or a number of replacement trees in sum that are equal or greater to the diameter of the tree that was removed inch for inch. All replacement trees shall be appropriate native trees. If a landowner cannot feasibly replace all the caliper inches of trees removed at a site, the landowner must pay a tree replacement fee to the Tree Mitigation Trust. Funds from the Tree Replacement Trust shall only be used to purchase trees and vegetation for planting on public property within the City or to fund landscape enforcement and educational activities required by this ordinance.

The City of Winter Park is an example of a local community in Florida that has established a Tree Replacement Trust Fund.⁹⁷

Sec. 19. FINANCIAL ASSURANCES.

When deemed necessary by appropriate local government staff, appropriate security or guarantees shall be provided by the applicant to ensure proper implementation of the landscape plan as approved. The guarantee may be in the form of a performance bond, trust fund, irrevocable letter of credit, or other financial assurance mechanisms acceptable and payable to the City. The amount of financial assurances shall be determined by the City.

When the appropriate local government staff determines that under the particular circumstances planting of trees or vegetation would not be prudent before a certificate of occupancy or certificate of completion is issued, the applicant may post a performance bond with the City Council, in a form acceptable to the City. The performance bond shall be in an amount no less than 125 percent of the estimated cost of all trees and vegetation to be planted, plus labor. The performance bond shall be received and accepted by the City prior to the issuance of the certificate of occupancy or certificate of completion.⁹⁸

Sec. 20. VARIANCE PROCEDURES.

As a matter of local government law, variances provide a means to address circumstances where there is a unique hardship placed on a landowner by strict application of a zoning regulation that is not shared by other property owners in

⁹⁶ *Id.*

⁹⁷ City of Winter Park, § 58-297, Alternatives to the preservation of trees not permitted for removal.

⁹⁸ Based upon Brevard County, Florida, Landscape Ordinance, Sec. 62-4334, General Landscaping Requirements.

the area.⁹⁹ A "variance" is relief granted from literal enforcement of a zoning ordinance permitting use of property in a manner otherwise forbidden upon a finding that enforcement of the ordinance as written would inflict practical difficulty or unnecessary hardship on a property owner. Generally, variances cannot be granted based on economic hardship alone or when the hardship is self-imposed.¹⁰⁰ In some jurisdictions in Florida, the hardship that warrants the variance must be such that it renders it virtually impossible to use land for the purpose for which it is zoned, i.e. no reasonable use can be made of the property.¹⁰¹

Granting a variance allows the applicant to depart from the requirements of the ordinance. This provision leaves the ultimate decision regarding these sorts of requests to the community governing body. Anticipated uses that are inconsistent with the requirements and goals of the ordinance may alternatively be permitted by express inclusion in the list of exemptions in section 5 of this ordinance.

- (1) **Petition.** Any landowner whose property is regulated by this ordinance may petition the appropriate local government staff for a variance from the requirements of this ordinance. The petition must include:
 - (a) the name and address of the applicant;
 - (b) a detailed description of the exigent circumstances that warrant variance from the requirements;
 - (c) a proposed landscape plan; and
 - (d) any other relevant information that staff requests of the applicant.
- (2) **Decision.** Within thirty (30) days of receiving the petition, the appropriate local government staff will notify the landowner in writing of its decision to either approve or deny the petition.
- (3) **Appeal.** The landowner may appeal a denial of the variance to the City Council by submitting a written notice of appeal to the City Council within thirty (30) days after the date of determination by the appropriate local government staff.

Sec. 21. ENFORCEMENT.

⁹⁹ See e.g. *Town of Indialantic v. Nance*, 485 So. 2d 1318 (Fla. App. 5th Dist., 1986), *Bernard v. Town Council of Palm Beach*, 569 So. 2d 853 (Fla. App. 4th Dist., 1990), *Crossroads Lounge, Inc v. City of Miami*, 195 So. 2d 232 (Fla. App. 3d Dist., 1967), *Board of Adjustment of City of Ft. Lauderdale V. Kremer*, 139 So. 2d 448 (Fla. App. 2d Dist., 1962).

¹⁰⁰ See e.g. *Metropolitan Dade County v. Reineng Corp.*, 399 So. 2d 379 (Fla. App. 3d Dist., 1981), *Thompson v. Planning Com'n of City of Jacksonville*, 464 So. 2d 1231 (Fla. App. 1st Dist., 1985), *Burger King Corp. v. Metropolitan Dade County*, 349 So. 2d 210 (Fla. App. 3d Dist., 1977).

¹⁰¹ See e.g. *Town of Indialantic v. Nance*, 485 So. 2d 1318 (Fla. App. 5th Dist., 1986), *Thompson v. Planning Com'n of City of Jacksonville*, 464 So. 2d 1231 (Fla. App. 1st Dist., 1985).

Implementation and enforcement of this ordinance by staff, including the City Arborist, shall consist of:

- (1) Notice of Violation. If any provision of this ordinance is violated at any time, the staff shall issue a written notice of the violation to the owner of the landscaped area. The owner shall have thirty (30) days within which to correct the violation before any punitive action is taken.
- (2) Fines. If any person who violates the provisions of this ordinance has not corrected the violation within thirty (30) days after receiving notice of the violation, the City may issue a fine to such person.
- (3) Injunctive Relief. If any person engages in landscaping activities regulated by this ordinance without the prior approval of a landscape plan by the staff, then the City may file an action for injunctive relief in a court of competent jurisdiction.
- (4) Denial of Permits. If any person fails to obtain approval of a landscape plan from the staff or implements a landscape plan contrary to the plan approved by the staff, the City may deny such person additional development permits on the basis of failure to comply with the requirements of this ordinance.
- (5) Inspections. Designated City landscape inspectors shall have the authority to make inspections at reasonable hours of all areas landscaped pursuant to this ordinance at any time during the development of a site, installation of the landscape plan at the site, and within the first year after the date that the landscaping is completely installed. The inspections may be made without notice, and refusal to allow such inspection will be a violation of this ordinance. Refusal to allow inspection will constitute grounds for a court of competent jurisdiction to issue an administrative warrant for the purposes of inspecting the landscaped area.
- (6) Suspension or Revocation of License and/or Certification: All registered landscape architects, landscape designers and landscape contractors that submit a landscape plan pursuant to this ordinance shall be responsible for ensuring that the landscape plan is installed as approved. Any landscape architect, landscape designer or landscape contractor that installs a landscape plan in violation of this ordinance shall be subject to suspension or revocation of their license in the municipality where the work was completed.

The keys to success for a landscape ordinance will be both public support and sufficient enforcement.¹⁰² A community must be willing to put resources into landscape inspections in order to enforce the provisions of this ordinance to

¹⁰² Duane R. Durgee, Alachua County Forester, *Characteristics of Good Tree Protection and Landscape Ordinances*.

achieve the goals laid out in section 2. Implementing strict requirements that deny development permits for noncompliance with this ordinance and placing responsibility on landscape professionals for certifying that their work is installed as planned are two powerful ways to ensure compliance.

Sec. 22. INCENTIVE PROGRAM.

A local government may choose to provide incentives to promote the use of appropriate native vegetation. This may be especially useful for property owners who are not otherwise subject to the ordinance, e.g. those not contemplating modifications to their landscaping. There are many incentives that a local government may offer to encourage its citizens to participate in the promotion of appropriate native vegetation. The following list provides examples of such incentives, including:

- 1) Fast track permitting for building and landscape permits*
- 2) Reduced permitting fees*
- 3) Certified Native Landscape Programs/Marketing*
- 4) Tax Breaks/user fee reductions*
- 5) Payment or Cost-Share Programs for Removal of Invasive Species*

Sec. 23. APPEALS TO CITY COUNCIL.

Any person adversely affected by a decision of the staff in the enforcement or interpretation of any provisions of this ordinance may appeal such decision to the City Council. Such appeal shall be made in writing to the City Council within thirty (30) days after the decision of the staff. The City Council shall set a time and place to allow the applicant to be heard. The City Council shall thereafter either grant or deny the application in whole or in part and notify the applicant in writing of its decision.

As an alternative, a local government may choose to provide appeals to the Landscape Committee, created pursuant to section 27 of this model ordinance, rather than to the City Council.

Sec 24. FEES.

The City Council may charge an applicant reasonable fees for any permits and applications required by this ordinance. Such fees may from time to time be amended by the City Council.

Sec. 25. LANDSCAPE MANUAL.

The City Council shall adopt a "Landscape Manual" by resolution that illustrates best management practices and standards for preserving existing native vegetation and natural areas, landscape design, tree installation, tree preservation, wildfire protection, and maintenance using appropriate native vegetation. The manual shall include a list for each landscape category of the appropriate native plants that should be planted in that landscape category. The purpose of the

manual is to provide landscape applicants with a resource that clearly depicts guidelines for landscaping design in accordance with these standards, including landscaping drawings, sample plans, and suggested landscaping practices that will promote a healthy environment in accordance with the goals as stated in section 2 of this ordinance. The manual shall be made available to the public at (<http://www.---.gov>) or by written request to the Landscape Committee. This manual may be amended and updated from time to time with approval of the Landscape Committee.

This landscape manual should be made widely accessible to the public and written to be both easily understood by single-family residential land owners and detailed enough to assist landscape professionals in their design plans for larger developments. The contents of this landscape manual are beyond the scope of this model ordinance, which is designed to set out the language for an ordinance requiring the use of native plants. The ordinance sets out the minimum landscaping requirements, while the manual can be used to assist landowners, landscape designers, and planners in designing creative landscaping using appropriate native plants and best landscaping practices.

Sec. 26. EDUCATION.

The City recognizes that education of its citizens on the benefits of appropriate native vegetation and the need for the use of more efficient landscaping practices is essential in order to protect the City's valuable natural resources, including water, wildlife, and native plants. In order to increase public awareness and educate its citizens of the critical need for the protection and promotion of appropriate native vegetation, the City shall sponsor workshops on landscape design principles and the benefits of landscaping with appropriate native plants. The City shall also make available educational materials to instruct landowners on the most efficient methods of landscape design and maintenance.

Education is a critical component to achieving benefits for the local community by encouraging the use of landscape design principles that incorporate appropriate native plants. This is particularly essential for single-family homeowners who may not be aware of the individual benefits they will receive, what plants actually are native or endangered or threatened, and how to design their landscaping to achieve water conservation, efficiency, and protection goals. Single-family landscaping can account for a large portion of a local community's landscaped areas and if designed properly can contribute significantly to protecting native habitat.

Sec. 27. LANDSCAPE COMMITTEE.

Review and approval or denial of individual landscape plans are handled at the appropriate local government staff level. The purpose of the Landscape Committee is to coordinate overall landscaping design and education within the local government's jurisdiction to promote the use of appropriate native vegetation and further the purposes of this model ordinance, pursuant to section

2, to achieve the benefits of preservation of existing native vegetation and use of appropriate native vegetation in landscaping.

Sec. 27.1. Purpose.

The Landscape Committee is created with the following general purposes:

- (a) to protect existing appropriate native vegetation;
- (b) to promote the use of appropriate native vegetation in all public and private landscaped areas;
- (c) to coordinate efforts to educate citizens of the City of Sabalville about the benefits of appropriate native vegetation and best management practices for efficient landscaping design; and
- (d) to make recommendations for the design of the overall landscaping plan for all public property within the City.

The purpose of this Landscape Committee is to have one knowledgeable group with an overall goal to promote efficient landscape design and use of appropriate native plants that acts as the coordinator of the local government's overall landscape design and education. Approval of individual landscape plans is handled at the staff level and not by the Landscape Committee. A local government may, however, choose to have the Landscape Committee hear appeals from staff denial of landscape plans instead of appeals to its City Council, see annotations to section 23 of this model ordinance, Appeals to City Council.

There is precedent for landscape committees that promote landscaping design principles. The City of Jacksonville, for example, has a landscape committee made up of eleven members that does not approve the landscape plans but has purposes to make recommendations to the City Council regarding landscaping of public property, create an overall landscaping and beautification plan for public property in the City, and to act as a coordinating body to encourage public and private participation in the landscaping of the City.¹⁰³ The City of Winter Park, as another example, has a Tree Protection Board that handles appeals from tree removal permits and makes recommendations for variances from tree protection requirements.¹⁰⁴

Sec. 27.2. Membership.

The Landscape Committee shall consist of a group of seven (7) members. The Landscape Committee, where practicable, should be made up of one member from each of the following categories:

- (1) local native plant society or organization representative;
- (2) local nursery growers association representative;
- (3) registered landscape architect;

¹⁰³ Jacksonville Landscape Commission, Jacksonville Ordinance Code §54.101-54.106.

¹⁰⁴ City of Winter Park, Tree Removal and Protection, §58-291-293.

- (4) certified landscape designer;
- (5) master gardener representative;
- (6) master naturalist representative;
- (7) public natural resource manager;
- (8) representative from the local builders association;
- (9) city arborist or other knowledgeable staff member if the City does not have an arborist on staff;
- (10) city forester or other knowledgeable staff member if the City does not have an forester on staff;
- (10) botanist or plant ecologist, ideally with an advanced degree in that field; and
- (11) representative of the Division of Forestry or local fire service with knowledge of highly-flammable plant issues near structures.

The purpose of listing the categories in the ordinance from which the City Council should consider selecting members to the Landscape Committee is to ensure that the City Council will select a balanced Landscape Committee that represents all interests fairly in the promotion of native plants. The number and types of members on the Landscape Committee in a particular community depends upon the size of the community, its specific needs, and the expertise available. The number of members on the Committee should be a small enough number to promote manageable decision making but not so small as to lose adequate representation of the interests.

Sec. 27.3. Appointment.

Members of the Landscape Committee shall be appointed by the City Council to serve a term of four (4) years. Members may be reelected for consecutive terms upon approval by the City Council.

Sec. 28. CONFLICTING REGULATIONS REPEALED.

All regulations that are in conflict with this ordinance, in whole or in part, are hereby repealed to the extent that they are in conflict.

Sec. 29. SEVERABILITY.

If any portion of this ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate provision and shall not affect the validity of the remaining portions of the ordinance.

Sec. 30. EFFECTIVE DATE.

This ordinance shall take effect on the date on which it is enacted by the City of Sabalville.

Appendix A.

EXISTING “NATIVE PLANT” DEFINITIONS

The following is a list of definitions of native plants and native vegetation used in existing legislation or academic journals. The Florida Native Plant Society definition is the one used in this model ordinance as the best definition of a “native plant.” The following examples are listed only to demonstrate examples of existing definitions for comparison and are *not* intended to be used as alternative definitions in a landscape ordinance. Several of these definitions may in fact be broad enough to include non-native or even Invasive plants.

- **Florida Native Plant Society** (www.fnps.org)

Florida Native Plant: refers to those species occurring within the state boundaries prior to European contact, according to best scientific and historical documentation. More specifically, it includes those species understood as *indigenous*, occurring in natural associations in habitats that existed prior to significant human impacts- and alterations of the landscape.

- Adopted by the Association of Florida Native Nurseries

- **Federal Native Plant Conservation Committee, 1994**

Native Plant: a plant species “that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions.”

- Adopted by the U.S. Department of Transportation, Federal Highway Administration,
Roadside Use of Native Plants
(<http://www.fhwa.dot.gov/environment/rdsduse/rdsduse5.htm>)

- **The United States National Arboretum** (www.usna.usda.gov/Gardens/glossary.html)

Native Plant: A plant that lives or grows naturally in a particular region without direct or indirect human intervention.

- **St. John’s River Water Management District Model Landscape Water Conservation Ordinance, Draft**

Native Vegetation: Native or drought-resistant plants include those in the District’s Waterwise Florida Landscapes, available at <http://www.sjrwmd.com/programs/outreach/conservation/landscape/index.html>; the Florida Native Plant Society’s list of native landscapes plants for _____ County, available at http://www.fnps.org/pages/plants/landscape_plants.php; *A Gardener’s Guide to Florida’s Native Plants* (Osorio 2001); or other compatible guidelines

- **City of Sanibel Code of Ordinances (Sec. 122-101)**

Endangered native plants: An indigenous plant species that has been identified as in danger of becoming extinct because of harmful human activity or environmental factors,

and that is thus the subject of protective regulations and conservation measures. These plants are identified on the following two lists:

Federal List: [http://endangered.fws.gov/50cfr plants.pdf](http://endangered.fws.gov/50cfr%20plants.pdf)

Native plants: Those plant species whose natural range included Florida at the time of European contact (1500 A.D.) as identified on the Atlas of Vascular Plants Website, which is identified as follows: Atlas of Vascular Plants, University of South Florida Institute for Systematic Botany: <http://www.plantatlas.usf.edu/default.asp>

▪ **Miami-Dade County Landscaping Ordinance (Sec. 18A-3)**

Native habitat: An area enhanced or landscaped with an appropriate mix of native tree, shrub and groundcover species that resembles a native plant community or natural forest community in structure and composition or is naturally occurring.

Native plant species: Plant species with a geographic distribution indigenous to all or part of Miami-Dade County. Plants which are described as being native to Miami-Dade County in botanical manuals such as, but not limited to, "A Flora of Tropical Florida" by Long and Lakela and "The Biology of Trees Native to Tropical Florida" by P. B. Tomlinson, are native plant species within the meaning of this definition. Plant species which have been introduced into Miami-Dade County by man are not native plant species.

Native plant community: A natural association of plants dominated by one (1) or more prominent native plant species, or a characteristic physical attribute.

▪ **City of Jacksonville Landscape and Tree Protection Regulations (Sec. 656-1203)**

Vegetation, native: means any plant species with a geographic distribution indigenous to all or part of the State of Florida.

Naturally occurring existing plant communities. See Vegetation, native.

▪ **City of Tampa Code of Ordinances (sec. 13-4)**

Native plant community: means those plant communities naturally occurring in north and central Florida.

Native plant material: means any plant material indigenous to central Florida and which is naturally grown or commercially propagated or cultivated for the nursery or landscaping industry.

Native tree: means any tree indigenous to central Florida or the city and which is naturally grown or commercially propagated or cultivated for the nursery or landscaping industry.

- **City of Gainesville Code of Ordinances (Sec. 30-23)**

Native: means those plants and animals, including commonized vegetation, and especially vegetation known to have existed locally when Ponce de Leon arrived in Florida, which are appropriate to the ecological setting, have noninvasive growth habits, are tolerant of the hydrologic conditions of the site, and require little maintenance upon maturity.

Native plants: means those plants, including commonized plants, which are appropriate to the ecological setting, have noninvasive growth habits, are tolerant of the hydrological conditions of the site, and require little maintenance upon maturity.

- **City of Orlando Code of Ordinances (Sec. 66-200)**

Native Plant Community: An indigenous association of plants identified by one or more prominent species or a characteristic physical attribute. In Central Florida, native plant communities include pine flatwoods; hydric, mesic and xeric hammocks; sand pine scrub; wetlands and cypress domes; prairies; sandhills; and hardwood forests.

Native Species (Plant or Tree): (Reserved.)

- **Florida Department of Environmental Protection, Draft Florida Friendly Landscape Model Ordinance**

Native Vegetation: Any plant species with a geographic distribution indigenous to all, or part, of the State of Florida

- **“Origin of the Species: Native versus Non-native Rangeland Plants.” By Sherry Dodson.**
(<http://www.cnr.uidaho.edu/range456/hot-topics/native-plants-debate.htm>)

Native, indigenous: Species that evolved in the region they inhabit.

- **Florida Nursery Growers and Landscape Association –**
Landscape Ordinance Policy Position Paper (www.fngla.org):

"The basic foundation of a local or county landscape ordinance must incorporate the overarching principle of horticultural science: 'put the right plant in the right place.' In other words, landscape ordinances must feature flowers, plants, trees, and shrubs that are suited for the soil, topography, and climate found at the landscape site. By 'putting the right plant in the right place,' FNGLA fully supports the wide use of native and non-native plants as there are plenty of sensible opportunities for both."

TOWN OF PALM BEACH

Information for ORS Meeting on: July 1, 2021

To: ORS Members

Via: Jay Boodheshwar, Deputy Town Manager

From: Wayne Bergman, Director of Planning, Zoning & Building



Re: Consider the Maximum Landscape Height of Buffers and Separation Distances
Between Landscape Buffers and Neighboring Buildings

Date: June 16, 2021

STAFF RECOMMENDATION

Staff requests that the ORS Committee consider the matter of creating a maximum height of landscape buffers and the minimum separation distance between newly planted and maintained landscape that is adjacent to neighboring buildings.

GENERAL INFORMATION

As was evidenced in last year's review and discussion of 131 Seaview Avenue, the planting of new landscaping directly next to neighboring buildings can be problematic. The vegetation, including tall hedges, trees and palms, can be the pathway for rodents (primarily rats) and Iguanas to access roofs and eaves. The idea of a maximum landscape height and a minimum separation distance between newly installed planting and neighboring buildings could be reviewed, along with maintenance standards for the newly planted vegetation. The matter was reviewed by the Town Council on October 13, 2020 and was sent to ORS for your study.

Included is a draft ordinance to amend Chapter 66, Natural Resource Protection, Article IV, Vegetation.

This code change is supported by PZB staff and was also supported by seventeen (17) residents. I will provide copies of their supporting letters and emails at you meeting.

Attached: Draft Ordinance
Letter from Martha & Steven Jeffrey Greenwald

ORDINANCE NO. ____-2021

AN ORDINANCE OF THE TOWN COUNCIL OF THE TOWN OF PALM BEACH, PALM BEACH COUNTY, FLORIDA, AMENDING THE TOWN CODE OF ORDINANCES, CHAPTER 66, NATURAL RESOURCE PROTECTION, ARTICLE IV, VEGETATION, DIVISION 1, GENERALLY, BY AMENDEING SECTION 66-212, PURPOSE AND INTENT; AND AT DIVISION 5, REGULATIONS, SUBDIVISION 1, IN GENERAL, BY ADDING SECTION 66-318, PROHIBITED PLANTINGS; PROVIDING FOR SEVERABILITY; PROVIDING FOR THE REPEAL OF ORDINANCES IN CONFLICT; PROVIDING FOR CODIFICATION; AND PROVIDING AN EFFECTIVE DATE.

Be it **ORDAINED** by the Town Council of the Town of Palm Beach, Palm Beach County, Florida, as follows:

Section 1. Chapter 66, Natural Resource Protection, Article IV, Vegetation, Division 1, Generally, is hereby amended by adding to Section 66-212, Purpose and Intent, Item (16), to read as:

“Sec. 66-212 (16) Reduce the likelihood of iguanas and rodents from gaining access onto roofs and into buildings.”

Section 2. Chapter 66, Natural Resource Protection, Article IV, Vegetation, Division 5, Regulations, Subdivision 1, In General, is hereby amended by adding Section 66-318, to read as:

“Sec. 66-318 - Prohibited Plantings.

Tall, growing vegetation shall not be planted near or under a neighboring roof, soffit, building, or other such structure. New plant material shall be planted so that no portion of the plant(s) are within twelve (12) feet of a neighboring building or portion thereof. Such plantings shall be maintained, once installed, to provide at least twelve (12) foot of clearance from any neighboring building or portion thereof.”

Section 3. Severability. If any provision of this Ordinance or the application thereof is held invalid, such invalidity shall not affect the other provisions or applications of this Ordinance which can be given effect without the invalid provisions or applications, and to this end the provisions of this Ordinance are hereby declared severable.

Section 4. Repeal of Ordinances in Conflict. All other ordinances of the Town of Palm Beach, Florida, or parts thereof, which conflict with this or any part of this Ordinance are hereby repealed.

Section 5. Codification. This Ordinance shall be codified and made a part of the official Code of Ordinances of the Town of Palm Beach, Florida.

Section 6. Effective Date. This Ordinance shall take effect immediately upon its passage and approval, as provided by law.

PASSED AND ADOPTED in a regular, adjourned session of the Town Council of the Town of Palm Beach on first reading this ____ day of _____, 2021, and for second and final reading on this ____ day of _____, 2021.

Danielle H. Moore, Mayor

Margaret A. Zeidman, Town Council President

Julie Araskog, Town Council Member

Edward Cooney, Town Council Member

ATTEST:

Lewis S.W. Crampton, Town Council Member

Queenester Nieves, CMC, Town Clerk

Bobbie Lindsay, Council President Pro Tem

Council, Mayor and Staff:

On July 15, 2020 Council instructed that we all get together and discuss. My wife and I were looking forward to sharing ideas with the lorio's and Mr Williams, and quickly resolving this. Meeting in person can build trust, and save Council precious time.

Unfortunately the lorio's, Mr Williams, and Moria, still have never contacted us (**ever**). We wrote friendly invites to call, meet, and we still are happy to, *if they would only call us*. But instead we must now write our response to Mrs lorio's July 23 letter to council:

Mrs lorio now proposes **Ficus Benjamina a/k/a weeping fig** (a fig tree) to be planted 35 feet all the way across our building where the iguanas had left feces.

Ficus Benjamina is in fact the plant iguanas love most! See Reptile Magazine the plant on the **top of their list #1 for iguanas as pets to thrive is: Ficus Benjamina!** See under "Plants to Consider." Link: <https://www.reptilesmagazine.com/plants-for-reptiles-and-amphibians/>

Reptiles, especially green Iguanas, love Ficus Benjamina **figs**, leaves, and to **climb** and "**loung**" on it, more than any plant! The lorio's want this plant to be 35 feet all the way across our building and 13.5 feet high, just at our roof soffits and their patio. Even though we have had a severe iguana feces problem in that exact area!



Also Reptile Advisor magazine agrees: The article: "**11 Awesome Plants for Chameleon Habitats**" and #1 in their list is also, Ficus Benjamina! The link:

<https://www.reptileadvisor.com/plants-for-chameleons/>

What about actual **Iguana veterinarians** (there *is* such a vet specialty). They explain on page 2 under the best "**Landscape and Furniture**" for iguanas to "**loung** on" that **Ficus Benjamina** and hibiscus are their favorites! See link: "Iguana Care Sheet" for those who have green iguanas as pets, and also the link on "**iguanas love figs.**" Healthy for them! <http://www.stanhope-vet.co.uk/wp-content/uploads/2015/02/Green-Iguana-Care-Sheet-STANHOPE.pdf>

With the lorio's new plan, Iguanas would come from all over the area to lounge, eat **figs**, and climb our roof and poop. **See also this link:**

<https://reptilefunction.com/figs-are-healthy-fruit-for-your-cyclura/#:~:text=Figs%20have%20been%20known%20as,nutritional%20info%20on%20figs%20here.>

Ficus Benjamina attracts and is great for iguanas. But the plant is also a known **toxic hazard for children, dogs, garden workers**. It's sap from leaves and branches is **toxic**, especially with a huge 13.5 ft x 35 ft wall of it in a small patio area. See: **Info, links in the footnotes at the end of this letter.**

The lorio's will of course need a different hedge plant iguanas won't love! According to experts, articles, **Ficus Benjamina** is also the **#1 most difficult hedge material to keep trimmed**. They explain: "you actually have to defend yourself from its growth. Coarse wood and coarse leaves, not soft foliage like [this podocarpus](#)" (Click to see podocarpus). The best easy to read article explains why **Ficus Benjamina** is the absolute **worst hedge plant possible**. Read, click the link: <http://mgonline.com/articles/hedgelist.aspx> They (and other articles) instead suggest **podocarpus** as perhaps the **best hedge plant**.

Photo: **PODOCARPUS**. *Lately experts' favorite tall hedge for South Florida*. This photo taken by Martha Greenwald days ago at a very fine Palm Beach home. *Podocarpus* is used by experts as a **tall hedge in manicured gardens as it too can be shaped**, and is very attractive (not possible with ugly massive *Ficus Benjamina*; if with figs, even more a problem). **Podocarpus** is "salt-tolerant, hot and cold tolerant, does well in any area of South Florida. Hot sun or shade is just fine." *South Florida plant guide*. See link:



<https://www.south-florida-plant-guide.com/podocarpus.html#:~:text=Plant%20specs&text=It's%20evergreen%2C%20salt%2Dtolerant%2C,than%20in%20a%20sunny%20one>.

Podocarpus, seen all across the front of the **Everglades Club** Palm Beach, can easily grow to 30 to 40 feet in height, quite **huge**. See the US Forest service South Florida at link: http://hort.ufl.edu/database/documents/pdf/tree_fact_sheets/podmaca.pdf

9 Foot height requirement: Podocarpus is still a very tall grow hedge, but as a courtesy **we would assent to a Podocarpus** 35 ft long hedge by our building. But no taller than **9 feet**. Iguanas can still climb the strong Podocarpus to our roof, so a 9 ft limit is essential. **Podocarpus** is very safe, non toxic, sturdy, attractive, easier to shape nicely.

WHY A LIMIT OF 9 FEET? After 3 years trying many things to keep iguanas from our roof, we cut **6 feet** of the lorio's current hedges away from our 15 foot soffits and nearby areas. Then new iguana feces immediately and totally stopped. **Hence the 9 feet height limit.** (15 - 6 = 9) (Note: Our historic soffit ornaments are actually at 15 feet high, not 15.5'. Anyone can come and measure. Mr Williams' drawing is a bit off).

Cutting less than 6 feet of their hedges away from our soffits just did not stop iguanas. We tried 2, 3, even 4 feet cut away on the hedges, and iguanas still got on the roof. Only when

we cut a full 6 feet, as experts advised, did Iguana **feces stop everywhere** on the **roof**, wall, their patio, our front above our garage, our driveway, everywhere. It has been that way **now for 8 months**. Problem solved, to our relief after 3 awful years. We also were puzzled why 3 or 4 feet distance did not stop the iguanas. But the iguana handlers we spoke to told us to “*cut 6 full feet away*” and they were correct. It worked!



Other reasons for the 9 foot limit: the higher the hedge the more impossible to keep trimmed, requiring tall ladders in a *tight* area. See **pic:** our very **tight area** on our right side of wall. (*Note also: the west neighbor's hedges shown in the pic are actually 6 ft from our roof. A side view pic of the distance is below*).

We also keep soffits painted on this historic home, and we put shutters up, all using tall ladders annually in this **tight space** that may have hedge branches that would make this hazardous. The wall is only 5.5 ft high in that area. With a tape measure one can see that **9 feet is tall enough**, with 35 ft wide of hedges pouring out 4 feet over our wall in that tight space (see pic). Our AC unit is back there too!

We will *also* have 70 more feet of loiro's giant hedges all across our south boundary we are required to keep trimmed, but we are not complaining about that. Our concern is their

frightening hedge height request along our building, just at our roof soffits.

Fact: If the lorio's hedges are any higher than 9 feet by our building, then iguanas will get to and leave feces on our big roof again. The 2 feet "protective" distance in Mr Williams' drawing will not stop iguanas. Experts remind us: iguanas are amazing climbers. Iguana feces would also fall on Mrs lorio's hedges, making her hedges a fecal depository. Our big roof leans directly to their patio. With rain, feces would fall onto their new hedges, the wall, and drain to their patio area.

Feces would once again be a serious *hazard* for my wife and I using our garage and driveway, as feces would also fall from the roof front. Feces did fall on our heads during rain, after we thought we had cleaned everything. Once, after returning from 2 months away, there was 40 square feet of iguana feces all over our roof. See **pic below of daily feces from our front roof**. We had to clean the roof repeatedly. It was a 3 year nightmare that we will not put up with again. Iguanas tore at our large roof vent trying to enter our attic, forcing us to tar it over completely. See the link to a similar issue: <https://www.youtube.com/watch?v=SNZaJedOLqQ>



The science: Iguana feces mixed with rainwater is a hazard, falling from a roof, falling on driveway, onto walking areas. **This is a severe hazard to my wife and I, any guests, and the lorio's.** See the link. There are many such articles: [Captive Green Iguana Carries Diarrheogenic Escherichia coli Pathotypes](#) See also: [Captive green iguana is a reservoir of diarrheogenic Escherichia coli pathotypes](#)

The TOWN OF PALM BEACH also warns of this known serious health hazard: *"Green iguanas can transmit the infectious bacterium Salmonella to humans through contact with water or surfaces contaminated by their feces".*

Town link:

<https://www.townofpalmbeach.com/909/What-is-a-Green-Iguana>

Mrs lorio's proposal requires us to rely fully on the lorio's (and their gardeners) to keep a difficult 35 feet wide of hedges trimmed to height, week after week for years. Her "proposal" shocked my wife and I. *We don't want a future where we constantly need Town Staff, Council, other authorities to protect us from these massive hedges*, no matter what type of tree they use. The lorios are not responding to calls and letters, why would they in the future?

So there would need to be **a proper written short agreement** that the lorio's promise and agree to keep the hedges, plants near or affecting our building **limited to 9 feet** (including all expenses to do that). Not simply a statement at hearing or note on a drawing buried in Town plans, or just an email. The agreement will be for future new different Town **staff** or Council. We and **Town Staff** will have a document to **easily rely on** any time.

Response to Mrs lorio's #1: The base of the current hedge 3 or 3.5 feet inside their property *proves that is **not** enough distance*. The hedge still provided a fine iguana ladder to our roof. As to removal of their current hedges (**Mrs lorio's #1 and #5**) yes please **do** remove these whitefly and termite infested plants as soon as possible. The builder must then place tall protective panels. The panels should be removed if there is a *hurricane watch*, and also building materials to prevent damage to our property. I believe all of that is a requirement of builders.

Mrs lorio's #2. Near our building the current hedge was kept 11 to 13 feet height the past 3 years, and iguanas still had an easy climb to our roof. The lorio's now want these hedges at

13.5 ft. Iguanas feces will be back on our roof. Only when we had cut a full 6 feet of the current hedge away from our 15 foot roof soffits did the feces stop.

As to Mrs Iorio's comment on the location of the roof structure of our 1925 historic home, and thus location of our home itself, this is irrelevant under **the law**. It is also unclear if Mrs Iorio is asking for demolition of our home!

What is the relevant law all must follow? The Iorio's saw our roof structure **before** they bought 131 Seaview months ago. The Iorio's had advice likely from architects, builder, broker. Courts make clear time and again, *a new owner who should have been aware of such a problem, certainly cannot later complain.* Namon v. State Dep't of Env'tl. Reg., 558 So.2d 504 (Fla 3rd DCA 1990). *A person who purchases land with notice of ... impediments ... can justify few, if any, legitimate expectations of development rights which rise to the level of constitutionally protected property rights.* Elwyn v. City of Miami, 113 So.2d 849, 852 (Fla. 3d DCA 1959).

The **relevant** issue is whether this Town can place restrictions on an owner's use of their property, as in this case. Florida's Supreme Court (current law) answered that question absolutely yes, *"[especially if it] adversely impacts another's property"* See Graham v. Estuary Properties, Inc., 399 So.2d 1374, 1382, 1383 (Fla.), cert. denied sub nom.

Other law that a Court would look at, if this all ends up there: "subjective expectation" that land could be developed a certain way *"is no more than an expectancy, and does not translate into a vested right."* Namon v. Department of Env'tl. Regulation, 558 So. 2d 504, 505 (Fla. 3d DCA 1990).

Case law explains if an owner is not allowed to *"do all they would like to do" with their property, "that alone is not sufficient for them to complain."* See Burger King v. Metropolitan Dade County, 349 So.2d 210 (Fla 3rd DCA 1977); Metropolitan Dade County v. Reineng, 399 So.2d 379 (Fla. 3rd DCA 1981); Nance, supra: Crossroads Lounge v. City of Miami, 195 So.2d 232 (Fla. 3rd DCA 1967)... *[a]n owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it is unsuited...and which [injures] the rights of others."* Florida Supreme Ct., in Graham v. Estuary Properties, Inc., 399 So. 2d 1374 (Fla. 1981), cert. denied, sub. nom; and See also Namon at 505 (citation above).

Courts have made clear: **"A 'reasonable expectation' must be more than a 'unilateral expectation or an abstract need'"** Court in Namon, citing Claridge v. New Hampshire Wetlands Board, 558 So. 2d 504, 505 (Fla. 3d DCA 1990); 125 N.H. 745, 485 A.2d 287, 291 (1984). **That includes Mrs Iorio's unilateral expectations or abstract needs for "privacy."**

As to Mrs Iorio's privacy: Our guest house is almost always empty, we never rent. We are always at the main house a distance away. At our club daytime, and gone summers. We live

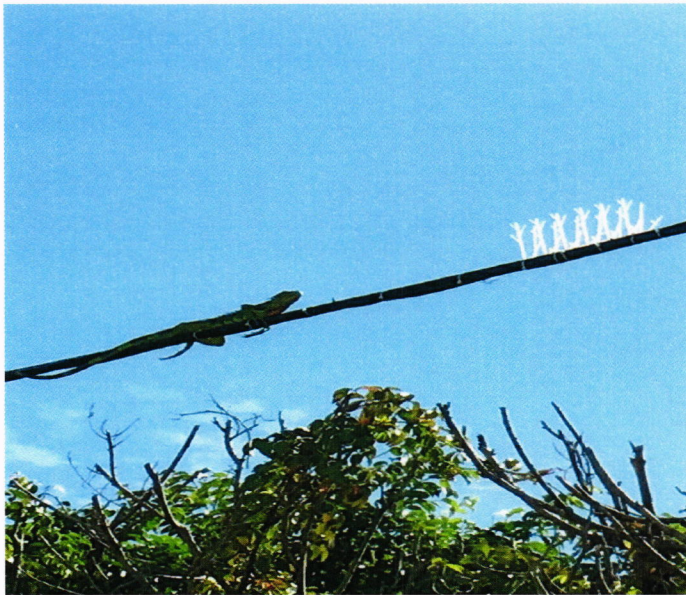
alone and have no children. The lorio's will have privacy. The lorio's would be more concerned about iguana feces & odor than about privacy, if iguanas get back on the roof.



Mrs loiro's #3. It is only the lower thick **ATT Cable** that iguanas use, and parts of it droop to as low as **15 feet** in spots. Iguanas **do not** use the much taller *powerline*, which is about 35 feet high. The ATT cable is *just above our roof* (see ATT cable in pic). **Mr Williams' drawing of a straight 18 ft cable all the way across, is off.** Anyone can come for a live view (bring a tape measure too!). **Drawings look nice, but a live viewing proves all.**

The other 16 ft tall hedges in Mr Williams' drawing show these hedges will start a few feet

east of our roof (see their drawing). These 16 ft hedges would provide iguanas a route to bypass the spikes (see **pic**) near our roof. So these 16 foot hedges will need to be kept 9 ft high for about 10 feet out, to our spikes. When Cables are soon undergrounded, they may go to 16 feet height starting 5 or 6 feet east. So just temporary.



Pic of iguana confronting our bird spikes that are now protecting the lorio's patio areas 100%.

Mrs lorio's #4 implies the next owner of our house will have no rights. Most buyers who look at our house want to preserve it. The next owners will not want iguana feces on the roof either. They will complain. *The problem will continue to take up time of staff, police, council, etc.* **Years of dispute can be avoided now at the planning stage.**

As to Mrs lorio's implication that iguana feces simply "resolved" we need to

correct this. The *resolution* happened **only** because we **cut 6 feet of their hedge away from our roof soffits**. Mrs lorio's proposal will bring iguana feces back to both our homes.

Mrs lorio's other #4 implies our west neighbor has hedges at our roof. This photo (below) taken yesterday shows our neighbor's west hedge, about 6 or 7 feet from our roof. Anyone can meet us here, have a look. This photo also shows our west iguana cable spikes, all 100%

effective. The lorio's plan will make these devices useless, as their hedges will help iguanas go directly to the roof (See pic below).



Bird-x goop we used is seen in an architect photo at the last hearing. Bird-x was put all across the south and west of our roof. Bird-x did not stop iguanas, but provided a **track** to easily see where iguanas came from. Iguanas always came from the hedge on the lorio's property, never from the west or anywhere else.

The Iguana invasion is here. The Town's iguana removal efforts are nice, but a removal day here or there will never solve the iguanas. Experts, including Florida county and city websites have shown we will just have to live with iguanas, but with *simple changes*. This includes no longer allowing ways for iguanas to get near a roof, especially a **neighbor's** roof. If iguanas can get near a roof, they will get on it.

The old days of approving tall hedges anywhere just because it is Palm Beach, are really **over**. The reason: the **iguana invasion**. *We in town can no longer plant new tall growing hedges near a neighbor's building if that neighbor objects.* An easy solve for most iguana problems.

Respectfully, Martha and Steven Jeffrey Greenwald, Esq.

Footnotes: Ficus Benjamina a/k/a Weeping Fig a/k/a Ficus Carnica (fig) hazardous to **children**, dogs, cats, garden workers: <https://www.gardenguides.com/120569-toxicity-ficus-benjamina.html> See also: <https://www.asPCA.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants/weeping-fig> See also: <https://www.petpoisonhelpline.com/poison/weeping-fig/> See also severe hazard for gardeners: https://www.researchgate.net/publication/5973917_Phytophotodermatitis_caused_by_contact_with_a_fig_tree_Ficus_carica

See Town of Palm Beach, Shiny Sheet article. **We are following what the Town recommends for iguanas.** We have successfully modified their habitat, via cable spikes, etc. **The applicants'** plan shows they have **no** interest in the town's iguana advice: "removing foliage they consume and prefer for nesting." Instead applicants chose iguanas' most desired plant for a 35 foot hedge across our garage, and to its roof. You can't make this up. See the link: <https://www.palmbeachdailynews.com/news/20190726/palm-beach-suggests-harassment-habitat-modification-to-deter-iguanas>