A Living Collections Policy for the Key West Tropical Forest and Botanical Garden

Approved May 27, 2010

George D. Gann
Executive Director
The Institute for Regional Conservation
www.regionalconservation.org

and

Stephen R. Hodges
Resident Botanist
Key West Tropical Forest and Botanical Garden

Background

Virtually all arboreta and botanical gardens have a living collections management policy (collections policy) and keep plant records, often including maps of plant locations. The precision of collections policies and the type and frequency of records kept obviously vary from institution to institution. Nevertheless, the development of a collections policy and a plant records program are crucial to managing a collection of living plants. Without a collections policy, it is impossible for an institution to properly define collection needs, to determine which plants should be acquired and which should be discarded, and to care properly for a collection of living plants. Furthermore, the lack of a coherent collections policy makes it difficult to determine staffing needs and qualifications as well as to develop plant acquisition and maintenance budgets. Finally, it is easy to become distracted and end up managing a collection for nostalgic reasons, personal taste, or ease of maintenance in the absence of a collections policy.

Collections policies are generally developed based on the mission, or purpose, of the garden. Display, education, retail sales, research, and plant conservation are just some of the reasons a garden may collect plants. It is not unusual for a garden to collect plants for multiple reasons or purposes. The way plants are displayed and the kinds of records kept are also influenced by the mission of the garden and the collections policy. Other important garden activities also benefit from a collections policy, including site planning, interpretation, and the development of research priorities.

The mission of the Key West Tropical Forest and Botanical Garden (the Garden) as posted on its website at www.keywestbotanicalgarden.org is: "The purpose of the Key West Tropical Forest & Botanical Garden Society is to preserve, develop, expand and maintain the historic Garden as an arboretum, botanical garden, wildlife refuge and educational center. The garden showcases flora that are native to South Florida, Cuba and the Caribbean and emphasizes cultivation of threatened and endangered species of the Florida Keys." Furthermore, "The Garden also

encourages study of its collection and promotes the benefits of native vegetation worldwide. The Society shall also provide educational programs for all age groups and various levels of interest geared to Keys residents, tourists, plant experts, and others."

In 2006, the Key West Tropical Forest and Botanical Garden Society (the Society) requested the preparation of a document describing how a living collections policy could be prepared for the Garden. This document was completed in November, 2006 (Gann, 2006). In early 2007, the Board of Directors of the Society approved the document in principal, and requested the development of a preliminary Living Collections Policy based upon its principles and recommendations. What follows is the first iteration of a Living Collections Policy for the Garden.

Developing a Living Collections Management Policy

The development of this living collections policy began with the following: 1) a floristic evaluation of the Garden was conducted (Woodmansee, 2006); 2) a general assessment of the living collection was conducted (Gann, 2006); 3) a collections niche was suggested (Gann, 2006); and 4) the purposes of the collection were defined (Gann, 2006). Following review of initial drafts of this document by the Board of Directors of the Society, the following was also accomplished: 5) species and individual plants that do not support the niche or purposes of the collection were identified; 6) policies for acquiring and propagating plants were developed; 7) the plant records program was defined, including which individuals should be tracked and what records should be kept; and, 8) management procedures for the collection were developed. This living collections management policy was given formal approval by the Board of Directors of the Society on May 27, 2010. It is recommended that this policy document be reviewed and amended at least every three years.

The 2006 General Assessment of the Living Collection

In 2006, the status of the living plant collection reflected somewhat haphazard and opportunistic acquisition and management procedures in place since the establishment of the Garden in the 1930s. That said, several trends had emerged that were consistent with the garden's current mission. Four major living collections were identified: native plants of the City of Key West including a patch of hardwood hammock and remnant native vegetation around Desbiens Pond; other plants of the Florida Keys and South Florida; other plants of Cuba and the Caribbean; and, plants that attract wildlife native to the City of Key West. A fifth category included plants, cultivated and/or naturalized, that did not fit into any of these categories and thus do not appear to serve the mission of the garden. As would be expected, some plants were included in more than one of the first four categories. Recommendations were made to tighten the collections niche (specifically narrowing from Caribbean to West Indies) and to identify those species that fell outside of the niche and thus do not contribute to the mission of the Garden.

The Collection Niche

The geographic scope of the living collection at the Key West Tropical Forest and Botanical Garden will include plants native to the Florida Keys and the West Indies (including the Bahama Archipelago), with a special emphasis on plants native to the lower Florida Keys and Cuba. There are more than 600 species of plants native to the Florida Keys and The West Indies contains around 10,000 species of native plants, many of which are rare or endangered. Cuba alone is estimated to contain as many as 5,000 species of native plants; about half of these species are endemic to Cuba and found nowhere else in the world.

The collection will only include those non-native species that are not invasive in the Florida Keys. All species not native to the area of interest and/or invasive to the city of Key West will be removed from the Garden over time. Invasive species will be prioritized for removal first.

For rare species in general, the focus will be on those species not being curated by other institutions. For rare species of the Florida Keys, the focus will be on those species that contribute to rare species and/or habitat restoration programs.

The collections niche in summary:

- All plants native to the City of Key West
- Other rare plants of the Florida Keys, with an emphasis on species from the Lower Keys
- Rare or characteristic plants of Cuba
- Other rare or characteristic plants of the West Indies

The collection will focus on the narrow first (Key West), then incorporate other species only if they meet additional criteria such as:
(1) Plants that will grow well in the garden and are not susceptible to pests and diseases
(2) Plants that are not cared for by other area or regional institutions or that contribute to conservation and/or restoration efforts
(3) Plants that help educate the public about native plant conservation and restoration
(4) Plants that attract native wildlife

The more precisely the niche can be defined the better, as the Garden has limited resources and space. One area that needs further thought is whether plants acquired strictly for retail sale should restricted to the collections niche as defined above, or whether additional species would be allowed (e.g. citrus).

Collection Purposes

Species as well as individual plants are collected for particular purposes, including display, education, research, conservation and retail sale. The same species or plant type may be acquired for multiple purposes. Some individuals may be appropriate for display; others for conservation, retail sale, etc.

Display: One of the principal purposes of the Garden is to showcase a display of plants native to the Florida Keys, Cuba and the West Indies in general. Many individuals assembled in the collection are beautiful specimens, and the site as a whole is becoming (again) an attractive and interesting place to visit. However, some plants on the site have overgrown their space, are inappropriate to the Garden mission, are aesthetically displeasing due to disease or mishandling, are invasive weeds, and so on. These individuals will be removed from the garden as time and resources allow. In some cases plants will be sold or given away, but in others the plants may have to be destroyed.

Plants acquired in the future for display will be chosen specifically for that purpose, and will meet criteria established in the plant acquisition policies. Future planting plans will take into account the individual's ultimate size to insure that conflicts between individuals do not occur, or are acknowledged and planned for. To the extent possible, plants will be assembled in groups to tell a story (an individual plant can also tell a story, such as who collected the seeds, or whose nursery it came from). When planning habitat plantings, plants will be organized in an aesthetically pleasing manner, but with species placed together in assemblages that make ecological sense (for instance, strictly Cuban karst plants not commingled with Florida Keys hammock plants).

Education: Following the mission of the Garden, all plants that are displayed will serve an educational purpose. Other plants will also be used for educational purposes, such as plants in the nursery that will be used to teach propagation techniques.

Research: Acquiring plants specifically for research purposes has not been done to date, but opportunities to conduct experiments with plants abound. For instance, the construction of new areas of the Garden can be done in such as manner to increase knowledge about the role of native plants in landscape gardening. Seeds and cutting of new species can be acquired specifically for the purpose of researching propagation techniques. In these cases, good experimental design and record keeping are essential.

Conservation: Determining which plants that will be acquired for the purpose of conservation will be defined by explicit conservation objectives; these objectives need to be developed. For instance, will the garden serve only to display rare species, or will it act as a repository of germplasm to be used for restoration programs? Once decisions are made concerning which species are to be in the conservation collection, then criteria can be developed concerning the purpose of acquiring individual specimens. Individuals in the conservation collection on display can serve additional purposes including education and ex-situ conservation objectives (preservation of germplasm). Plants chosen for ex-situ conservation can provide seeds or cuttings used to propagate additional individuals.

Retail Sale: Some plants will be acquired or grown strictly for retail sale. In these cases it becomes important to determine which plants are to be sold and for what purpose(s): strictly fundraising, promotion of native plants, education? A list of species approved for cultivation and sale will be developed and adhered to, based on criteria developed as part

of the acquisition policies. A list of prohibited invasive species will also be developed and the cultivation of these species prohibited.

Identifying Plants to be Removed From the Collection

Decisions about which kinds of plants or individuals should be kept in the collection will be driven by this collections policy. Some large, old trees that would be very difficult or expensive to remove from the collection may be left *in situ* for a time until the proper resources are in hand for proper removal and replacement. Removal of plants legally protected by the City of Key West will be implemented in coordination with city authorities and with all proper permits. Removal of plants from the collection will be prioritized, starting first with invasive plants and then with plants that grow very fast and may become prohibitively expensive to remove in the future (e.g. undesirable *Ficus* species).

High priority species for removal are listed in Table 1. Nearly 50 species of plants are on this list, including trees, shrubs, vines and herbs. Removal of plants will be conducted in such a way that, to the extent possible, surrounding plants and ecosystem functions are protected.

Table 1. High priority plants for removal from the Garden.

Scientific name	Common name	Principal area of Garden
Adenanthera pavonina	Red sandalwood	Old garden
Agave sisalana	Sisal-hemp	Throughout
Ageratum conyzoides	Tropical whiteweed	Old garden
Albizia lebbeck	Woman's tongue	Throughout
Antigonon leptopus	Coral vine	Old garden
Ardisia elliptica	Shoe-button ardisia	Throughout
Asparagus setaceus	Common asparagus-fern	Old garden
Cestrum diurnum	Dayflowering jessamine	Throughout
Calophyllum inophyllum	Beautyleaf	Along College Road[1]
Cissus verticillata	Possum-grape	Throughout
Colubrina asiatica	Latherleaf	Throughout
Casuarina equisetifolia	Australian-pine	Throughout
Catharanthus roseus	Madagascar periwinkle	Throughout
Cryptostegia sp.	Rubbervine	Old garden
Flacourtia indica	Governor's-plum	Old garden
Jasminum fluminense	Corky-stemmed jasmine	Throughout
Jasminum sambac	Arabian jasmine	Butterfly garden
Lantana camara	Shrubverbena	Throughout
Leucaena leucocephala	Leadwood	Throughout
Livistona chinensis	Chinese fan palm	Throughout
Manilkara zapota	Sapodilla	Along College Road[1]
Nephrolepis cordifolia	Tuberous sword fern	Throughout
Pandanus tectorius	Pandanus palm	Old garden

Parkinsonia aculeata	Mexican palo verde	Throughout
Paspalum notatum	Bahia grass	Chapel
Psychotria punctata	Dotted wild coffee	Old garden
Pteris vittata	China brake	Throughout
Ptychosperma elegans	Solitaire palm	Throughout
Ricinus communis	Castor-bean	Throughout
Ruellia tweediana	Britton's wild petunia	Butterfly garden
Sansevieria hyacinthoides	Bowstring-hemp	Throughout
Schefflera actinophylla	Australian umbrellatree	Throughout
Schinus terebinthifolius	Brazilian-pepper	Throughout
Spathodea campanulata	African tuliptree	Old garden[1]
Tamarindus indica	Tamarind	Old garden[1]
Terminalia catappa	Tropical-almond	Throughout
Thespesia populnea	Portiatree	Throughout
Tradescantia spathacea	Oysterplant	Throughout
Urochloa subquadripara	Signal grass	Throughout
Vitex trifolia	Simpleleaf chastetree	Chapel
Washingtonia robusta	Desert palm	Throughout

Stemming the Proliferation of Invasive Species

In order to help reduce the spread of invasive species, the Garden will adhere to the Voluntary Codes of Conduct for Botanic Gardens and Arboreta (Appendix A). The Garden will stay informed
of the activities of the Florida Exotic Pest Plant Council (www.fleppc.org), and will use the official List of Florida's Invasive Species as a guide in developing policies for the removal of non-native plants from the Garden (Florida Exotic Pest Plant Council, 2007 and as updated biennially).

Plant Acquisition and Propagation Policies

The decision to acquire a plant for the collection will be made according to whether it fits within the collection niche as articulated above. The specific purpose for which the plant is intended will be explicitly determined. Because of limited resources and space, a system of prioritizing acquisitions will be developed. Similarly, the propagation of plants already in the collection at the Garden will serve a specific purpose.

The following minimum criteria will be followed:

- Plants must be of a proper appearance for the use intended
- Plants must be free of disease and pests
- Plants must have provenance data (the geographic origin of the plant), at least as to who grew or sold the plant

- Propagations history, if known

Record Keeping

Good record keeping that supports the long-term management and usefulness of living plant collections is a requisite of all high quality botanical gardens. There are several types of plant records (e.g. BG-Base) and mapping software (e.g. BG-Map) available and a review of these resources will be conducted. Once selected, every effort will be made to incorporate existing electronic and written information into a single database. Individuals possessing information on the collection will be interviewed and their knowledge documented. Individual display plants and planting beds will be mapped. Individual plant tags will be visually inspected and removed and replaced if causing harm to the plant, if they are unreadable, etc. The type of information displayed on the tag and systems used to attach the tag to the plant will be reviewed and modified as appropriate.

Plant Records: Plant records policies determine which plants are to be tracked or, in other words, accessioned. Accessions are generally organized around a particular type of plant of the same price and size, acquired at the same time from the same place. Accession records represent an inventory of the living collection and are an extremely important part of the institutional memory of the Garden. Beginning in 2007, all acquisitions of plants, for whatever purpose, will be recorded and accessioned. Also beginning in 2007, individual plants acquired before 2007 will be evaluated as to whether they are to remain in the garden as part of the living collection. Individual plants to remain will be accessioned over time, beginning with Major Specimens as described below.

Plants to be Tracked as Individuals: All newly acquired trees and woody shrubs will be tracked as individuals and tagged. Existing tree resources will be accessioned and mapped according to criteria described in Attachment A. In some cases, beds of herbaceous plants will be accessioned and tracked as groups. All plants in the nursery not intended for immediate retail sale will be accessioned and tracked. Plants tracked as individuals will be observed and data will be recorded on a regular basis, at least annually. Data to be collected should include plant condition (e.g. excellent, good, fair, poor), height, spread, dbh (diameter at breast height – 4.5 feet above the ground on the uphill side of the tree), reproductive status, and location in the garden.

Recording Data: All invoices and other acquisition data will be copied and stored as part of the accession data. All new plants arriving at the site will be inspected and compared to invoice or shipping documents. Any discrepancies, such as species identification, size etc., will be noted by the person inspecting the plants. Each accession will be given a unique accession number beginning with the year and ending with three additional digits (e.g. 2007001). Each plant to be tracked as an individual will be assigned a unique qualifier beginning with the number 1. The combined accession number and qualifier

will be recorded for each individual plant to be tracked and a label attached to the plant (e.g. 2007001.1).

Labels: All plants to be tracked as individuals will be labeled. Labels will include at a minimum the scientific name of the plant and the accession number.

Names: Whenever possible, scientific and common names for all plants in the collection shall conform to those used by the Institute for Regional Conservation in the Floristic Inventory of South Florida Database Online at www.regionalconservation.org.

Major Specimens: The lease agreement between the Society and the City of Key West requires an annual inventory of Major Specimen plants – the definition of which was to be determined by the Society. In 2007, the authors developed preliminary criteria for what constituted a Major Specimen plant (Appendix B).

Mapping Plants: Many gardens map their living collection; including both larger woody plants and beds containing herbaceous plants. Some mapping software (e.g. BG-Map) is now attached to plant records software for ease of use. Plants can be mapped with traditional surveying instruments or, more recently, with Global Positioning System (GPS) equipment. GPS is easier to use, but has limitations under a heavy tree canopy. Mapping of those plants classified as Major Specimens began in 2007. Mapping of additional plants following criteria described in Attachment A was initiated in 2008. The ultimate goal will be to map all plants planted in the ground that are tracked as individuals.

Managing the Collection

Once the collections niche and purpose is determined, a thorough inventory of the collection is needed to identify the most valuable plants in the collection as well as those with the greatest maintenance needs. Staff and volunteers will require supplemental horticultural training, including the basic plant identification needed to eliminate invasive plants and horticultural weeds without destroying important native plants in the process. Another area of major need is to develop policies for the management of the nursery. All management policies should clearly spell out procedures to be used for all necessary functions and minimum standards to be followed.

Garden Design: The display areas of the garden will be of a naturalistic style that mimics natural ecosystems. To the extent possible, plants will be placed together that could be encountered together in a natural ecosystem.

General Plant Care: General plant care includes proper installation of plants, bracing, watering, and mulching. Actual procedures will vary depending on species and nativity; however certain techniques can be applied to broad groups. Plants should be installed with the root ball at or just below the soil surface. Woody plants may be staked, braced or otherwise supported until the roots are well established; this should be implemented

along guidelines established by the International Society of Arboriculture. Large, transplanted or rescued specimens may need extended periods of bracing.

Species native to the Florida Keys need to be watered only until they establish themselves, typically a period of two to three months. Additional watering should not be necessary after this time. Some species native to the West Indies may need additional watering after this initial period, depending on environmental requirements. Wherever appropriate, mulch will be used to decrease watering requirements and enhance soil conditions. Mulch should not be placed directly on the stem of the plant, thus preventing fungal infections. Mulch should not be used in display areas that mimic pineland, prairie or marsh ecosystems.

Fertilization: Most plants in the garden will not require fertilization once installed. However, some West Indian specimens will require additional fertilization, including minor elements. Fertilization of these species will be done on a minimum basis as to not introduce excessive contaminants in the aquifer or soil. In most cases, a slow release formula which specifically addresses the needs of the plant will be used. In some cases, micronutrient applications may be necessary especially in cases where plants are native to regions with acidic or serpentine soils. In all cases, a controlled, tracked regime of fertilization will be implemented to prevent excessive use.

Diseases and Pests: Diseases and plant pests will be treated according to standards accepted by the Institute of Food and Agricultural Sciences at the University of Florida. Additionally we will regularly monitor and report to the Department of Agriculture on any unknown pests that may occur on the property. An authorized official of the Florida Department of Agriculture and Consumer Services (FDACS) will conduct annual monitoring of nursery plants. Plants that are disease or pest ridden may need to be removed and discarded in an individual bin to prevent spread.

Pruning: Pruning of plants will follow guidelines accepted by the International Society of Arboriculture (ISA). Plant pruning should take into consideration the natural shape of a mature specimen of the individual tree species. Pruning of young trees is particularly important as it will determine the health, shape and longevity of adult specimens.

Weeding: Weeding needs to be conducted on a regular basis by informed staff and/or volunteers. Weeding should be part of a planned maintenance routine. Conducting weeding prior to the establishment of large scale infestations will help to improve plant health and help to reduce pests and disease. Obviously, removal of weeds by the roots will result in better results. Mulching after weeding will also help to suppress the re-growth of weedy species. Since the garden is based on a naturalistic design, some species that may appear to be weeds are actually native plants that have value to the collection. Additionally, some “weedy” species provide benefits to wildlife, in particular butterflies. Because of this, it is essential that anyone involved with weeding in the garden needs to have adequate training and supervision.

Pest plants, such as invasive exotics, need to be removed as quickly as possible to combat spread. Treatment with herbicides may be needed to ensure the plants are killed. Herbicide treatments will follow guidelines published by the Florida Exotic Pest Plant Council (FLEPPC), the Florida Keys Invasive Plant Task Force, and other similar organizations.

Nursery Operations: Nursery operations are expected to change substantially over time as the capacity and infrastructure of the garden increases. Because of this, a detailed plan is needed to manage nursery operations. This document, which will be attached to the collection policy as an appendix when completed, will address several major themes including: nursery maintenance, plant acquisitions, seed care and storage, propagation, cultivation and care of nursery plants, light conditions, irrigation, pest control and fertilization.

References

Florida Exotic Pest Plant Council. 2005. List of Florida's Invasive Species. Florida Exotic Pest Plant Council. www.fleppc.org/05list.htm.

Gann, G.D. 2006. Developing a living collections policy for the Key West Tropical Forest and Botanical Garden. The Institute for Regional Conservation. Miami, Florida. Report submitted to the Key West Tropical Forest and Botanical Garden Society by The Institute for Regional Conservation.

Woodmansee, S.W. 2006. A floristic evaluation of the natural plant communities and grounds occurring at The Key West Botanical Garden, Stock Island, Monroe County, Florida. The Institute for Regional Conservation. Miami, Florida. Report submitted to the Key West Tropical Forest and Botanical Garden Society by The Institute for Regional Conservation.

Appendix A

Voluntary Codes of Conduct[2]
For Botanic Gardens and Arboreta

February 2002

1. Conduct an institution-wide review examining all departments and activities that provide opportunities to stem the proliferation of invasive species and inform visitors. For example, review or write a collections policy that addresses this issue; examine such activities as seed sales, plant sales, book store offerings, wreath-making workshops, etc.

2. Avoid introducing invasive plants by establishing an invasive plant assessment procedure. Predictive risk assessments are desirable, and should also include responsible monitoring on the garden site or through partnerships with other institutions. Institutions should be aware of both

direct and indirect effects of plant introduction, such as biological interference in gene flow, disruption of pollinator relationships, etc.

3. Consider removing invasive species from plant collections. If a decision is made to retain an invasive plant, ensure its control and provide strong interpretation to the public explaining the risk and its function in the garden.

4. Seek to control harmful invasive species in natural areas managed by the garden and assist others in controlling them on their property, when possible.

5. Promote non-invasive alternative plants or, when possible, help develop non-invasive alternatives through plant selection or breeding.

6. If your institution participates in seed or plant distribution, including through Index Seminum, do not distribute known invasive plants except for bona-fide research purposes, and consider the consequences of distribution outside your biogeographic region. Consider a statement of caution attached to species that appear to be potentially invasive but have not been fully evaluated.

7. Increase public awareness about invasive plants. Inform why they are a problem, including the origin, mechanisms of harm, and need for prevention and control. Work with the local nursery and seed industries to assist the public in environmentally safe gardening and sales. Horticulture education programs, such as those at universities, should also be included in education and outreach efforts. Encourage the public to evaluate what they do in their own practices and gardens.

8. Participate in developing, implementing, or supporting national, regional, or local early warning systems for immediate reporting and control. Participate also in the creation of regional lists of concern.

9. Botanical gardens should try to become informed about invasiveness of their species in other biogeographic regions, and this information should be compiled and shared in a manner accessible to all.

10. Become partners with other organizations in the management of harmful invasive species.

11. Follow all laws on importation, exportation, quarantine, and distribution of plant materials across political boundaries, including foreign countries. Be sensitive to conventions and treaties that deal with this issue, and encourage affiliated organizations (plant societies, garden clubs, etc.) to do the same.

Appendix B

Criteria for Classification as a Major Specimen

George D. Gann and Stephen R. Hodges

June, 2007
Revised, March 2008

To determine which individual plants qualified as major specimens species-specific criteria have been developed. Generally, for hardwood species dbh (diameter at breast height) was used. For palms, height was used. For species with multiple trunks, the dbh was measured right beneath the split, unless this split occurred less than a foot off of the ground, in which case the largest trunk was measured.
Plants growing in the extensive natural area protruding into the golf course behind Desbiens Pond were excluded from the inventory to date.

Species-specific Criteria

1 inch dbh or greater: *Randia aculeata*.

2 inch dbh or greater: *Capparis flexuosa*, *Eugenia rhombea*.

3 inch dbh or greater: *Canella winterana*, *Drypetes diversifolia*, *Eugenia axillaris*, *Guajacum officinale*, *Guajacum sanctum*, *Jacquinia keyensis*, *Sideroxylon celastrinum*.

4 inch dbh or greater: *Citharexylum spinosum*, *Eugenia foetida*, *Manilkara jaimiqui subsp. emarginata*.

6 inch dbh or greater: *Byrsonima lucida*, *Exothea paniculata*, *Krugiodendron ferreum*, *Pithecellobium unguis-cati*, *Pouteria campechiana*, *Reynosia septentrionalis*.

9 inch dbh or greater: *Guapira discolor*.

12 inch dbh or greater: *Bucida bucerus*, *Coccoloba diversifolia*, *Piscidia piscipula*, *Sideroxylon foetidissimum*.

18 inch dbh or greater: *Bursera simaruba*, *Conocarpus erectus, Delonix regia*.

24 inch dbh or greater: *Manilkara zapota*, *Swietenia mahagoni*.

3 feet dbh of total trunk and aerial root system or greater: *Ficus citrifolia*.

5 feet dbh of total trunk and aerial root system or greater: *Ficus aurea*.

3 feet of gray wood to base of crown shaft or greater: *Pseudophoenix sargentii*.

15 feet clear trunk or greater: *Coccothrinax barbadensis*, *Thrinax radiata*.

20 feet clear trunk or greater: *Sabal palmetto*.

3 feet in height or higher: *Solanum bahamense*.

All: *Barringtonia asiatica*, *Kigelia pinnata*, *Terminalia arjuna*.

Excluded Species

The following is a list of species that, although some large specimens exist, do not qualify as Major Specimens because they are not native to and are invasive in the lower Florida Keys.

Adenanthera pavonina	Red sandalwood
Albizia lebbeck	Woman's tongue
Calophyllum inophyllum	Beautyleaf
Casuarina equisetifolia	Australian-pine
Flacourtia indica	Governor's-plum
Leucaena leucocephala	White leadtree
Livistona chinensis	Chinese fan palm
Parkinsonia aculeata	Mexican palo verde
Ptychosperma elegans	Solitaire palm
Schefflera actinophylla	Australian umbrellatree
Schinus terebinthifolius	Brazilian-pepper
Spathodea campanulata	African tuliptree
Terminalia catappa	Tropical-almond
Thespesia populnea	Portiatree
Washingtonia robusta	Desert palm

[1] Some individuals may be legally protected by the City of Key West.

[2] Center for Plant Conservation. 2002. Voluntary Codes of Conduct For Botanic Gardens and Arboreta. http://www.centerforplantconservation.org/invasives/gardensN.html. Center for Plant Conservation, St. Louis.