



A WORD OR TWO ABOUT GARDENING

Staying Green while Conserving Water in Miami-Dade: Choosing Flowering Shrubs for Landscape Color

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Introduction

Miami-Dade like many other Florida counties is committed to achieving more effective use of available water resources. Reducing household water consumption is a key

What is a drought?

There is no standard definition but it is more than rainfall totals. Both place and time have to be taken into consideration. What defines drought conditions in Miami differs from those in Las Vegas. Extended periods of scant rainfall are expected in Miami during January but not June. A drought is usually recognized when water shortages are sufficient to cause noticeable crop damage, and/or impact supply. Factors include the immediate period without rain plus the actual water deficit (a measure of the reduced amount stored in aquifers and surface bodies of water).

component of achieving this goal. [In Florida it has been estimated that from 30-60%](#) of total

residential water consumption is used to irrigate landscapes. Achieving reductions in landscape water use requires adopting more efficient irrigation practices and increasing the proportion of drought tolerant plants in area landscapes.

Drought tolerance alone is not sufficient. The trees and shrubs used in local landscapes also have to withstand the rainy season (mid-May to mid-October) when Miami-Dade receives most of its' annual ~60" of rain. For this reason many drought tolerant plants endemic to Mediterranean type climates (warm wet winters and hot dry summers)

or year round aridity may not succeed in local

landscapes. More likely to adapt to South Florida conditions are flowering shrubs and trees from areas that experience a similar seasonally wet/dry climate (warm dry winters/hot humid summers).

Given the porous nature of local soils, shrubs such as brugmansias, tibouchinas and copperleaf can develop moisture related stress problems within days during hot dry

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weather. The focus of this publication is drought tolerant flowering shrubs for landscape color. It is one of a series featuring trees and shrubs for Miami-Dade landscapes that once established, will survive in full sun without irrigation. In some instances shrubs grown in local garden soil (e.g., *Hamelia patens* firebush) will survive without irrigation in full sun, but look more attractive where there is some afternoon shade. Using an appropriate amount of shade as a means of reducing moisture loss is a viable option for shrubs that do not require full sun. Among South Florida native shrubs this includes **wild coffees** *Psychotria* spp.; **spicewood** *Calyptanthes pallens*; **fiddlewood** *Citharexylum spinosum* and **marlberry** *Ardisia escallonioides*.

All of the shrubs described below require full sun. Some compete poorly with other plants being found naturally in open sites on infertile sandy or rocky soil where vegetation is sparse. For this reason when locating them in your landscape, try to minimize competition from other plants by avoiding tree roots, controlling weeds and removing turf within at least 2' of the planting.

The term 'established' as used above refers to a period of 8-12 months after planting

Establishment – For a 3 gallon shrub, in the absence of measurable rainfall, provide 1-2 gallons of water every other day for the first 6 months after installation. Apply water to the top of the rootball either by hand (a watering can or hose with a wand type nozzle) or irrigation system (use drippers or bubblers, avoid lawn sprinklers which waste water). For the first 4-5 weeks it is important to direct water to the top of the rootball rather than the surrounding soil.

during which the shrub needs to be watered until a sufficiently strong root system has developed. Thereafter irrigation should not be necessary, moisture needs will be satisfied by rainfall alone from Miami-Dade's seasonally wet/dry climate. Use fertilizer if required sparingly choosing a complete slow release formulation with no more than 8% nitrogen (N). Many of the shrubs described below, especially south Florida natives, are slow growing. Unless otherwise indicated, pruning should rarely be required apart from removal of dead or damaged stems. Some of the shrubs can be limbed-up and grown as small trees with one or more main stems acting as trunks.

The shrubs described are grouped into three sections: **Local favorites**; **South Florida natives** and **Underutilized/less familiar shrubs for Miami-Dade**.

Installation – A 3 gallon container shrub will become established more rapidly and is easier to install than one of larger size. Planting in late spring as rainy season commences can reduce the need for supplemental water and provide time to establish sufficiently to better withstand winter stress. Incorporating organic matter into the top 6" of soil (do not exceed 10 – 15%) in the area where the shrub(s) is to be planted will encourage more rapid root growth. For shrubs adapted to rocky or very sandy soils (e.g., some south Florida natives) heavy soils will require amending with coarse sand/grit. The planting hole should be at least 3x the width, but no deeper than the rootball, and have sloping sides. Do not cover the top of the rootball with soil. Shave the outer portion of the rootball and loosen roots to facilitate growth into the surrounding soil.

LOCAL FAVORITES

While the purple **bougainvillea** *Bougainvillea glabra* is especially drought tolerant, all bougainvilleas will survive where annual rainfall is at least 25". Although generally found growing as scandent shrubs that require support, some bougainvilleas can be used as free standing shrubs (make effective hedges), while low growing forms find



use as groundcover. Far less common the **tree bougainvillea** (*B. arborea*, name not officially recognized) shown left grows as a 30' tree, though it can be maintained at 8-10'. Rather than their diminutive white to yellow flowers, it is the associated colorful bracts that are the focus of the bougainvilleas' ornamental appeal.

Bougainvilleas adapt well to Miami-Dade's fast draining sandy/rocky soils, and are tolerant of salt making them an excellent choice for coastal sites. Flowers form on new growth in response to shortening days and/or reduced soil moisture. Where soils remain dry the purple flowering *B. glabra* tends to flower year round; when hybridized with *B.*

peruviana (most red flowering cultivars) it becomes more seasonal. Locally most bougainvilleas commence flowering late fall with the start of the dry season continuing well into spring when the plants are practically leafless. The tree bougainvillea differs, blooming later in spring; in addition the flowers possess a mild sweet fragrance and spent flowers (brown bracts) are retained.

To ensure reliable flowering cut back as needed in late spring/early summer followed by an application of a complete slow release fertilizer. After late August leave well alone (no fertilizer nitrogen, no supplemental water and only minimal pruning). There are few insect pests of note; locally, bougainvillea loopers (caterpillars) can cause significant chewing damage, otherwise aphids and scale insects are

Installing bougainvilleas - exercise care as the roots are very fragile - smaller size container plants with a full root ball are easiest to install. It helps to first cut out the bottom of the container with a utility knife. Then, placing your hand underneath to support the base of the root ball, position the bougainvillea in the planting hole at grade and loosely back fill. Next pull the sides of the container up cutting it down one side and removing it from the plant. Carefully tamp down and moisten the soil around the root ball.

occasionally encountered. Bacterial (*Pseudomonas*) and fungal (*Cercosporidium*) leaf spots can be problems where leaves remain wet, usually from excess shade. Bougainvilleas are in general easy to propagate using green to semi ripe cuttings, though less robust variegated cultivars are often grafted onto a more vigorous rootstock.

Instillation and care of oleanders: select a site that drains rapidly and situate in full sun. If surrounding area receives fertilizer (e.g., turf) this is sufficient. Otherwise apply 1.5 lbs of slow release 8-2-12 per 100 sq ft during spring. Regular pruning is necessary to maximize flowering, preferably during a period when flowering is on the wane. For young shrubs remove water sprouts (basal stem suckers) and excessive root suckers. For more mature plants cut dead/diseased stems off at the base; avoid drastic pruning which stimulates excessive vegetative growth at the expense of flowering. Older plants can be rejuvenated by cutting one third of the mature stems back to the ground; next year cut back half the remainder followed in year three by the other half. In years 2,3 and 4 thin out newly emerging shoots and prune back longer new stems.

Oleander *Nerium oleander*, while at its best in drier Mediterranean type climates, adapts well to Miami-Dade's, poor, rocky to sandy, alkaline soils where it can provide low maintenance color interest. Like bougainvilleas, a high tolerance of salt makes oleander ideal for coastal locations. Despite [a reputation as highly poisonous shrubs](#) oleanders have remained popular with relatively few cases of accidental poisoning, though exercise caution and avoid situating plants where they are easily accessible to young children.

Oleander cultivars are found in a range of sizes (dwarf, intermediate

and tall), colors (white to cream/yellow or various shades of pale pink to red to purplish red), with both single and double flowering forms available and a few that are fragrant. Common pests include the bristly, orange, caterpillar of the polka dot moth, which can quickly defoliate a plant, with scale insects and aphids locally of lesser importance. Oleanders are susceptible to sphaeropsis knot, a fungal disease which causes stem galls, witches broom and die back. Infected stems should be cut back at least 6" below the affected area, disinfecting all tools before and after pruning.



Crape myrtles *Lagerstroemia indica*, have been undergoing a small renaissance locally, though greater advantage could be taken of [the many hybrid cultivars now available](#) 'Natchez', (see photo below) is a frequently seen white flowered cultivar

and like most other crepe myrtles is used as a small tree (usually multi-stemmed), however smaller more shrubby cultivars are also available. Crepe myrtles require excellent drainage and prefer slightly acid soil but succeed on local limestone. They lose all of their leaves during winter (deciduous), which first turn an attractive red and orange before falling to the ground, giving a rare hint of fall color to the South Florida landscape. Flower panicles, in various shades of pink, purple, red and lavender plus white, form on new growth and appear late spring into summer. Pruning if required can be undertaken after leaf drop but no later than early spring. Potential pest problems of most significance are powdery mildew (resistant cultivars are available) and aphids (use an insecticidal soap if control is necessary).



Plumeria* spp.** Native to the Caribbean basin and commonly referred to as frangipanis, plumerias are most familiar as small, often fragrant, flowering trees in a variety of colors. Of uncertain parentage, the majority of these frangipanis are derived from crosses involving ***Plumeria rubra. There are other *Plumeria* sp. in cultivation; most have white flowers and several can be used as shrubs. Of these, ***Plumeria obtusa*** Singapore plumeria is most widely known. Forming a 6-10' shrub/small tree, it is usually at least partially evergreen in

Miami-Dade, and is especially appreciated for the strong lemony fragrance of the flowers.

Plumeria pudica, (shown left) is fast increasing in popularity in Miami- Dade landscapes. More or less evergreen locally, it is commonly known as bridal bouquet for the clusters of perfectly white flowers, and easily identified by its' spatulate (spoon-shaped) leaves. The cultivar *P.*



pudica ‘New Pink’ has pale pink flowers which, unlike bridal bouquet, are also fragrant. Not as widely known *Plumeria filifolia* (syn. *P. stenophylla*) has a denser, bushier growth habit. The leaves are narrow and strap-like, the flowers fragrant with long thin white petals. *Plumeria x stenopetala* (a hybrid of *P. stenophylla*) has exceptionally fragrant white flowers with thin white petals and grows as a lax shrub/small tree.

Plumerias are both drought and salt tolerant so make excellent choices for coastal landscapes.

Many *Plumeria rubra* hybrids are available as large cuttings which can be readily rooted. Take care when transplanting, as rooted cuttings have a very delicate root system.

However apart from *P. obtusa*, the white flowering species described above are usually sold as container plants; *P. x stenopetala* is usually grafted and it is highly recommended for *P. pudica*. Scale insects are occasional pests as well as the large and prominently striped [larvae of the tetrio sphinx moth](#).

Locally [frangipani rust](#) can cause severe defoliation of *P. rubra* hybrids during the rainy season. Other species provide varying degrees of resistance from limited (*P. obtusa*); moderate (*P. pudica*) and highly resistant (*P. x stenopetala*)



Byrsonima lucida

SOUTH FLORIDA NATIVE SHRUBS

Although neither as flamboyant nor familiar as the above local favorites, there are several shrubs native to south Florida with flowers/ fruits having ornamental appeal. An outstanding example is the locustberry *Byrsonima lucida*, a potentially large shrub growing to 18’ (it can be kept smaller) with numerous erect stems bearing small, leathery, elliptic to oblanceolate leaves. Blooming is most prolific March through May when racemes of flowers with clawed petals appear.

At first white then pink they finally turn red,

giving the inflorescence a multi-colored appearance (see above). Well adapted to local limestone, locustberry grows in full sun or light shade (e.g., pine rockland) and requires fast draining soil – susceptible to over watering in garden soils.

Tetrazygia bicolor Florida tetrazygia or Florida clover ash (shown right) is



Tetrazygia bicolor

unmatched among south Florida's native white flowering plants. It is found restricted to a few sites on Miami-Dade's limestone ridge growing as a large (10 -15') rather openshrub. Typical of the Melastomaceae to which it belongs, the leaves have three prominently depressed, longitudinal veins, A prolific bloomer, terminal clusters of white flowers with conspicuous, long, yellow stamens are first seen in March and last well into summer. Florida tetrazygia should be planted in full sun or light shade; it thrives on local limestone but often languishes when planted on sandy soils which may explain why it is not used more widely.

Jamaica caper *Capparis jamaicensis*, another outstanding south Florida native flowering shrub, occurs in both coastal scrub and further inland around hammock margins making it well suited to both limestone and sandy soils.

Leaves are coriaceous and lepidote (underside covered in tiny silvery scales). Blooming from spring into summer, flowers open night into early morning with pinkish white petals, exerted whisker-like stamens (as shown right) and are mildly fragrant at first. The fruits that follow (a thin brown capsule suspended on a long peduncle) become more noticeable as they split, the bright orange to red interior



Capparis jamaicensis

contrasting sharply with a series of dark brown seeds. **Limber caper** *Capparis flexuosa*, also native to South Florida, is somewhat similar to *C. jamaicensis* differing in its scandent growth habit, non-lepidote leaves and distinctive fruit capsules which split to reveal white seeds set in a bright red aril.

Lignumvitae *Guaiacum sanctum* is one of the most esteemed of south Florida's native plants. A slow growing small tree/large shrub, it forms a broad canopy of knotty branches supported by several often contorted stems (as a tree there are usually multiple trunks) having deeply furrowed bark. Leaves are opposite and pinnately compound, comprised of up to 4 pairs of small glossy leaflets. Apart from the character derived from its' growth habit, the striking blue to violet flowers are lignumvitae's principal attraction (as shown below). Flowering occurs in early spring, followed by conspicuously 5-chambered seed capsules which open in fall to reveal



Guaiacum sanctum

seeds covered in a bright red aril – if the seeds are to be planted remove the aril which inhibits germination. In addition to excellent drought tolerance, lignum vitae is highly tolerant of salt and well suited to Miami-Dade limestone based soils. Choose a site in full sun with free draining soil and be

patient. Lignum vitae is slow to very slow growing, but the wait is well worthwhile. Large (>7g) container plants are one option if you want to cut the waiting time, but they are expensive.

Apart from flowers, some south Florida native shrubs produce fruits that contribute landscape color. **Smooth strongback** *Bouyeria succulenta* grows as a small tree or

large shrub contributing both small fragrant white flowers and, as shown left, colorful fruit to area landscapes. Smooth strongback adapts to porous limestone or calcareous sandy soils and grows in either full sun or light shade. In the latter case there's an increased likelihood of developing a narrower more upright canopy.



Bouyeria succulenta, fruit

Beautyberry *Callicarpa americana* A leggy shrub (6 -8'), especially when grown in shade. Axillary clusters of delicate pink flowers (at best semi-showy – shown below) are followed by highly ornamental, long-lasting, purple berries (see inset), which may last past Thanksgiving (unless devoured by birds!).

Beautyberry is more attractive when the long canes are cut back hard in late winter, which also serves to stimulate vigorous new growth. It succeeds on a wide variety of soils, including local soils with a sandy or calcareous base, more so if they contain some organic matter.



Callicarpa americana (inset shows fruit)

Varnish leaf *Dodonea viscosa* is a fast growing shrub (to 18') of highly variable appearance with attractive flaking bark and shiny leaves (new growth appears lacquered). Flowers are of little interest, but the terminal clusters of pink



Dodonea viscosa

to red tinged, 3-winged, papery fruit capsules (shown left) are highly decorative (cf. fruit capsules of related non-native and weedy golden rain tree, *Koelreuteria elegans*). Varnish leaf can be used as a specimen shrub or as a fast growing screen; the cv. 'Purpurea' has purple leaves and redder fruit capsules (believed to have originated from seed collected in New Zealand, this cultivar is more popular in California).

Some other highly drought tolerant native flowering shrubs include: **button sage** *Lantana involucrata*, low shrub to 4-5', leaves aromatic, small compact heads of dainty white (to pale lavender) flowers - fast growing for a south Florida native plant); **blackbead**

Pithecellobium keyense, a large shrub or

sometimes small tree with very irregular branching – white to pinkish, globose, mimosa-like flowers. Yellow flowering south Florida natives include two low growing shrubs: **pineland acacia** *Acacia pinetorum*, delicate gray/green feathery leaves, fragrant globulose flowers – spiny, excellent as a 5-8' barrier shrub and **Bahama senna** *Senna mexicana var. chapmanii* relatively fast growing, low, sprawling shrub to 4-6'

with terminal clusters of showy yellow flowers – can be used as a tall groundcover. Seedling volunteers may need to be removed but normally a minor problem.

***Pentalinon luteum* wild allamanda** is a small vine with pale green leaves and yellow trumpet shaped flowers – more tolerant of drought and calcareous soils than related non-native yellow allamanda (*Allamanda cathartica*). This vine may also be offered under the confusing name of yellow mandevillea.

SOME UNDERUTILIZED/LESS FAMILIAR SHRUBS FOR MIAMI-DADE

As well as the selection of familiar, non-native shrubs described above, consideration also needs to be given to other drought-tolerant, non-native shrubs that are either under- utilized or as yet unfamiliar. The shrubs reviewed below cover the full spectrum of colors from red to blue, begin at the red end of the spectrum and finish with blue.

Dwarf poinciana (*Caesalpinia pulcherrima*), also known as **pride of Barbados**, has been one of the most widely used of flowering plants worldwide in tropical landscapes. Local use has declined, however dwarf Poinciana remains a good choice that combines excellent drought tolerance with splashes of vivid tropical color. It grows as a somewhat open shrub (to 10') with scattered thorns and bipinnate leaves. Each individual inflorescence (shown right) comprises an upright panicle of flowers having yellow margined, orangey red petals (the cv. 'Flava' has all yellow flowers).

Like most other caesalpinias dwarf poinciana is adapted to dry climates, with an exceptional ability to tolerate full sun, drought and poor soils. Fast growing with irregular branching, dwarf poinciana can become somewhat untidy necessitating regular pruning to help maintain a neat appearance. 'Compton' is a more upright cultivar (easier to maintain as a small tree) having white margined, deep pink to scarlet petals. Far less common is ***C. cassioides*** the **cassia- leaved**

caesalpinia with emarginate (notched) grayish green leaflets and bright scarlet, bell-shaped to tubular flowers. Found as a sparsely thorny, large shrub or small tree, it grows locally to about 15'.



Caesalpinia pulcherrima

For red flowers consider the **Jamaican poinsettia**, *Euphorbia punicea* winter blooming 12' shrub/small tree (shown below right). Once difficult to find it is now available from several area growers. Apart from full sun, Jamaican poinsettia needs a fast draining soil. It is a short-day plant, flowering from winter well into spring.

Branching is trichotomous (regularly gives rise to three new stems). The color and size of the flower bracts is variable and seed leading to the need to propagate from cuttings from specimens with superior ornamental features. As with many euphorbs the fleshy branches contain irritant milky sap.

More familiar **peregrina** (*Jatropha integerrima*), also member of the spurge family (Euphorbiaceae), is also known simply as jatropha or spicy jatropha, and popular with local Cuban Americans (it is native to Cuba). Locally it forms an open woody shrub up to 10', the dark green leaves more or less elliptic, often with slightly lobed margins, or occasionally

more deeply lobed with a prominent terminal lobe. The inflorescence

comprises a terminal branched cyme, each flower (in clusters of three) having a bright red tubular corolla. The cultivar '**Compacta**' is tighter growing and narrower, ideal for planters (use a soil mix with added coarse sand and Perma-Til) where it can be kept at 3-4'. The more compact form also makes it easier to train as a small tree, eventually attaining a height of $\approx 10'$.

Peregrina thrives in poor soil, including the rocky/sandy soils found in Miami-Dade, is drought tolerant and requires minimal care. Choose a free draining site in full sun, prune as necessary (can be cut back hard in late winter if necessary) and apply a slow release fertilizer in spring. Watch for scale insects and mealybugs (more likely where there is poor air circulation) and to a lesser extent damage from mites. 'Pink Princess' a pink flowering cultivar is also available; anecdotal comments suggest this is not as robust as red-flowering species.

Two other jatrophas are occasionally seen in local landscapes, the **gout plant** (*J. podagrica*) and **coral plant** (*J. multifida*). The former is of more ornamental appeal



Euphorbia punicea

and grown as much for the unusual swollen knobby trunk as the flat topped clusters of small, brilliant orangey red flowers. The leaves, which are concentrated near the branch tips, each consist of a large (to 12" wide) deeply lobed blade borne on elongated petiole (like a fig leaf), on long petioles. Flower clusters are borne on long, red tinted stems, and are found on and off throughout the year. Gout plant can grow to about 6'; thinning most of the leaves lessens vertical growth and develops a 'trunk' that is more pachycaulous (swollen). Extended cool temperatures during winter can cause some yellowing and loss of leaves. Situate gout plant in full sun, providing a rapidly draining soil (should contain 1/3 coarse sand/grit), otherwise it is very prone to rot. Do not water during winter. Make a light application of a slow release fertilizer in late spring. Apart from root and stem rots watch for scale insects and mites (especially in late winter/spring). Gout plant is also sold as **Budhas belly** and **Guatemala rhubarb** and is especially useful as a source of flower color in a dry rock garden where it can be combined with plants such as agaves, aloes and cactus-like euphorbias.

The bush pentas *Arachnothryx leucophylla* (formerly *Rondeletia leucophylla*) is a somewhat willowy shrub growing up to 8-10' with lanceolate leaves, the undersides distinctly silvery, and clusters of rosy red to deep pink flowers. Flowering commences in late fall and continues into late spring. Bush pentas adapts well to local limestone based soils and is a good choice as a low maintenance specimen shrub, or several can be used to provide a tall, colorful, informal screen. In spring provide a light application of a slow release fertilizer, and prune as necessary (early summer



after flowering ceases is a good time for any extensive pruning). Extended cool weather rather than a lack of

Arachnothryx leucophylla

soil moisture may result in some leaves developing a few reddish streaks during winter - several other members of the Rubiaceae such as ixoras and firebush also develop reddish leaf spots on exposure to cool temperatures,

Pride of the Cape *Bauhinia galpinii*, is admired for its late spring/summer display of stunning, brick red to orange orchid-like flowers. Native to southern Africa, it grows as a large scandent shrub and was quite popular in local landscapes 30-40 years ago but



Bauhinia galpinii

has since fallen out of favor. Pride-of-the-Cape needs full sun for best flowering and should be planted in a free draining somewhat sandy soil. It can be allowed to grow as a sprawling shrub or for best affect tied in to a pergola, arbor or sturdy chain link fence. Although a scandent climber, friction between a stem and its support can induce *B. galpinii* to weakly twine. Allow plenty of room as it can grow to 15 – 20' and resents hard pruning. Like most other bauhinias in cultivation, pride-of-the-Cape has bilobed "cloven hoof" leaves, a limited number of which may drop in winter, more so during an extended period of cool weather.

Bauhinias are susceptible to potassium deficiency and on high pH calcareous soils iron/ manganese deficiency can occur. Apply a complete slow release fertilizer high in potassium (the 8/2/12 palm special is ideal) in early spring and again late summer, and if necessary chelated iron. Apart from its outstanding ornamental attributes and excellent drought tolerance, pride-of-the-Cape is not invasive unlike some other bauhinias. In cultivation any seedpods that do form contain mostly sterile seeds. Propagation is from seeds (where available) or by air layers.

Bahamas fire bush (*Hamelia cuprae*, is a large shrub/ small tree growing up to 15'. Related to the more familiar native firebush (*H. patens*) it has smaller, bright green, glabrous (smooth) leaves and a denser growth habit. The



Hamelia cuprae

flowers are larger, bell-shaped and yellow at first, deepening to a reddish orange and are present throughout the year especially late spring into summer, Bahama firebush adapts well to local limestone based soils and is tolerant of salt making ideal for coastal sites as either a single specimen shrub or as an informal screen. Further inland there is some leaf drop in winter, more so in western suburbs with colder overnight temperatures. Prune in late winter to remove any dead stems and shape as needed. Bahamas firebush can be clipped but flowering will be reduced.

Flame vine (*Pyrostegia venusta*, The Bignoniaceae (jacaranda family) contains



Pyrostegia venusta

several outstanding showy vines, many of which climb (at least in part) by means of leaf tendrils. One of the most conspicuous of these vines, *Pyrostegia venusta* (**flame vine**) is ablaze with color during winter/early spring when it is covered with tightly packed

clusters of slender, tubular, brilliant fiery orange flowers. A fast growing, potentially huge vine, it should be situated well away from trees, and is unsuited to growing on the side of a building.

Flame vine is best trained on a pergola, or an extended length of sturdy, chain link fence. Try to restrict growth to the 2-3 strongest main stems, removing all others. These can be allowed to run along the top of pergola or fence and will produce

flowering side shoots. After flowering, side shoots

can be cut back to within 2-3 buds of the main stem (early spring). Whichever way you decide to grow flame vine, cut back severely at this time to keep it within bounds – it responds well to hard pruning. Choose a site in full sun and enrich native rock/sandy soils with some organic matter.

***Cordia lutea* yellow cordia**, is found on the arid Galapagos Islands as well as drier parts of Ecuador and Peru where it grows as a medium size tree or large shrub. The leaves of yellow cordia are scabrous (abrasive to touch) like those of



Cordia lutea

the more familiar Geiger tree (*Cordia sebestena*, but smaller and with crenulate margins. The main attraction is the year round display of clusters of brilliant yellow open tubular flowers. Yellow cordia requires full sun and a rapidly draining site and is suitable for protected coastal sites. No serious diseases or pest insects are known – unlike the Geiger tree the leaves are not disfigured by Geiger tree beetles.

Yellow cordia usually grows as a tree in the wild but cultivated specimens grown from air layers develop a shrubby growth habit. In cultivation fruits (drupes) and therefore seeds aren't produced (lack of adequate pollinators). For trees it is necessary to grow from seed.

Senna polyphylla the **desert cassia** can be added to the native sennas previously described above is a slow growing, particularly drought tolerant non-native species from Puerto Rico.



Senna polyphylla

Although popular in local landscapes as a low maintenance, small tree, desert cassia produces multiple shoots from the root crown and in the wild is usually seen as multi-stemmed shrub. It is admired for both the extremely delicate compound leaves and in winter – early spring, the small axillary clusters of bright yellow flowers.

Tecoma castanifolia chestnut-leaved elder is related to the more common (and somewhat weedy) *Tecoma stans* (yellow elder) but differs in having simple

rather than pinnately compound leaves. Forms a small multi-trunked tree or large shrub and not as prone to sprawl as yellow elder. Flowers on and off throughout the year – less so in summer Chestnut-leaved elder adapts well to local calcareous soils and can be grown in protected coastal sites. Provide full sun and a site with fast draining soil - it will not survive flooding. While seedling volunteers are not the problem they can be with yellow



Tecoma castanifolia

elder, *T. castanifolia* is inclined to develop root suckers, more so on thin rocky soil.

***Uncarina grandidieri* (succulent sesame)**, a member of the Pedaliaceae (sesame family) is endemic to Madagascar where it grows on limestone outcrops as a 5-10'



Uncarina grandidieri

small tree or shrub. In cultivation it

is popular as a container plant grown by succulent enthusiasts.

However like another more familiar succulent, desert rose (*Adenium obesum*), there is no reason why it should not thrive in local landscapes if given a full sun situation and a rapidly draining, coarse soil mix.

Juvenile *U. grandidieri* show limited branching (they do eventually produce an attractive dense canopy), but cuttings commence flowering within a

year. The leaves are cordate,

shallowly lobed and covered with soft hairs. The flowers have been likened to petunias with a long floral tube, flaring golden yellow to bright yellow lobes and a dark maroon throat. The unusual fruit, a dehiscent capsule with prominent, elongated, sharply barbed spines, does not form locally due to lack of suitable beetle pollinators. Pollination by hand is possible but difficult. As a result seed is scarce so most plants are grown from cuttings and usually lack the prominent swollen trunk/stems of seed grown plants; in other respects (e.g., flowering) they are the same. Use a soil mix containing 10-15% organic matter plus coarse sand mixed with soil from the planting hole. While small container plants should be watered during hot dry weather an established landscape specimen of *U. grandidieri* will not require supplemental water. During the summer rainy season provide a slow release fertilizer. Few pests have been found locally – occasionally aphids may infest new growth or leaves exhibit cosmetic damage due to serpentine leaf miners. On young plants frost may damage stems (which should be removed) and root/basal stem rots are likely on soil that remains wet.

***Duranta erecta* (Golden Dew Drop)** is a large spreading shrub, occasionally grown as a tree (see below), with slender upright to drooping stems with branches bearing simple, oval to elliptic, ½- 3” leaves often with serrated margins and scattered spines.

The inflorescence consists of many pendant racemes of ¼ to ½” light blue flowers, produced any time from spring through fall followed by conspicuous, orangey yellow fruits, attractive to birds, but poisonous to humans. Golden dewdrop should be planted in full sun (it will take some shade though not flower as freely), and adapts well to any free draining soil including local sandy and rocky calcareous soils. It is fast growing and responds well to drastic pruning – cut to the ground it will readily re-sprout. Normal pruning should be performed after flowering; thin out if necessary by selecting a few older stems and removing them at ground level. Tip pruning can be used to promote a bushier specimen, but *Duranta* is more attractive, especially when flowering, as a tall shrub with long arching stems. The poisonous fruits can be removed, or if not a concern leave them to attract birds. Despite heavy crops of fruit, there are few seedling volunteers. Sometimes promoted as a Florida native (Keys?), this is in doubt and it appears more likely *D. erecta* was an introduction from the Bahamas or Caribbean.



Duranta erecta 'Sapphire Showers'

Some very attractive *D. erecta* cultivars are now available: 'Geisha Girl' is more compact with deep blue flowers with a white center and border, whilst 'Sapphire Showers' produces larger, violet blue flowers having ruffled picotee petals with a narrow white margin (see above photo). These are sometimes available as standards (grown to a single stem) with a weeping habit, and can substitute for a small tree where space is limited. There are also a number of cultivars having variegated leaves, whilst 'Alba' has white flowers.

White flowering shrubs. If your yard strikes you as a monotonous sea of green and you aren't certain what to use for relief, you can't go wrong with a white flowering shrub. You don't need to know anything about the appropriate use of contrasting or

complementary colors as it applies to landscaping. White is the one color that can be used safely in any part of the garden: to focus attention as a stand-alone specimen plant or to frame or divide other elements of the landscape. For present purposes there are many drought tolerant white flowering from which to choose. As well as Florida tetrazygia, which was described above there several other shrubs native to South Florida that have at least semi-showy white flowers (e.g., various stoppers such as Simpson stopper, *Myrcianthes fragrans* and Spanish stopper, *Eugenia foetida*). Among non-native plants there white flowering bougainvillea, crepe myrtle and oleander cultivars. and ,

***Carissa macrocarpa* Natal plum** (shown below left) is another familiar shrub which is due for a revival. It provides dense, dark green glossy foliage which contrasts well with the scattered jasmine-like flowers. Carissa can take some partial shade, if there is adequate air circulation, though it won't be as floriferous and being highly tolerant of salt it is ideal for coastal sites. Of interest principally as an ornamental shrub, Natal plum also produces 2" bright red edible fruit with acid to sub-acid flesh and copious



Carissa macrocarpa

amounts of non-toxic milky white latex, leading to it being referred to as strawberries and cream. Due principally to pollination problems, fruit production locally is far less compared to the related but less ornamental karanda. There are many cultivars of *C. macrocarpa* but apart from some of the earliest that were developed for superior fruit, most of those currently available have been selected for ornamental features so that fruit if any is often of poor quality. Several dwarf varieties are available, some of which are used as ground cover.

***Oncoba spinosa*, spiny oncoba** also known as the fried egg tree grows as a 15 -20' tree or large shrub with 3" serrated leaves, pinkish red at first, becoming dark green and is heavily armed with stout 1-2½" spines. In late spring through summer, particularly after heavy rainfall, the tree produces 2-3" white camellia like flowers with a central 'yolk' of prominent yellow stamens. Individual flowers last little more than a day, but apart from the visual appeal

have a delicious sweet melon like fragrance. Endemic to areas of dry open woodland from Arabia into Africa, spiny oncoba is a tough tree that exhibits excellent drought tolerance. The tree is semi-deciduous, leaf loss depending on the extent of cold weather exposure. Avoid heavy pruning as this will stimulate pronounced root suckering.

The white flowering **bracelet wood** (*Jacquinea arborea*) is ideal for open coastal sites; very slow growing with stiff leathery leaves, and sprays of small, fragrant white flowers followed by ornamental yellow to red berries (poisonous). Situate in full sun well away from large trees to avoid root competition. Bracelet wood is well adapted to rocky calcareous soils. **Joewood** (*J. keyensis*) an endangered south Florida native (Keys) is similar. Both species are very slow growing and therefore expensive.

Photo Credits: All original except *Dodonea viscosa* (Forest & Kim Starr) and *Caesalpinia pulcherima* (Adrian Hunsberger)