Key features in determining the weeds from the natives

Dexter Sowell & Kim Alexander
Florida Natural Areas Inventory
Introduction

• Land managers and contractors
• Active exotics removal in Florida and at same time high number of native/rare species that are very similar to exotics
• Avoiding non-target damage to our natives is KEY
• This presentation is a series of species comparisons to help us avoid non-target damage

Information Sources:
• Florida Natural Areas Inventory
• ISB Atlas of Florida Plants
• UF/IFAS Center for Invasive Plants

Don’t let “mistaken identity” happen in your invasives control projects !!!
TREES
AND
SHRUBS
CHINESE TALLOW
Triadica sebifera

CORALBEAN
Erythrina herbacea
CHINESE TALLOW  
*Triadica sebifera*

- Tree, unarmed
- Simple leaf
- Small yellow flowers
- Milky sap
- Capsule with white seeds

CORALBEAN  
*Erythrina herbacea*

- Small shrub, armed
- Compound leaf
- Red tubular flower
- No milky sap
- Legume (bean pod) with red seeds
SHOEBUTTON ARDISIA
Ardisia elliptica

MARLBERRY
Ardisia escallonioides
**SHOEBUTTON ARDISIA**
*Ardisia elliptica*

- Leaf margins revolute
- Flowers in stalked axillary clusters
- Shrub <2 meters tall

**MARLBERRY**
*Ardisia escallonioides*

- Leaf margins flat
- Flowers in terminal clusters
- Shrub/small tree to 5 meters tall or more
Coral Ardisia
Ardisia crenata

- Leaves with crenate margins
- Flowers in stalked axillary clusters
- Bright red drupes

Marlberry
Ardisia escallonioides

- Leaves entire
- Flowers in terminal clusters
- Drupes turning black
CORAL ARDISIA
Ardisia crenata

WILD COFFEE
Psychotria nervosa
**CORAL ARDISIA**

*Ardisia crenata*

- Alternate leaves
- Revolute, crenate leaf margin
- Leaf veins not prominent

**WILD COFFEE**

*Psychotria nervosa*

- Opposite leaves
- Slightly revolute, entire to wavy leaf margin
- Leaf veins prominent
**CHINESE PRIVET**  
*Ligustrum sinense*
- Terminal flower clusters
- Evergreen leaves
- Leaf margins entire
- Short petiole
- Underside of leaves with hairs along the midvein

**GODFREY’S SWAMPPRIVET**  
*Forestiera godfreyi*
- Axillary flower clusters
- Deciduous leaves
- Leaf margins toothed above the middle
- Longer petiole
- Underside of leaves uniformly hairy
CHINESE PRIVET

*Ligustrum sinense*

FLORIDA SWAMPPRIVET

*Forestiera segregata*
CHINESE PRIVET
*Ligustrum sinense*

- Terminal flower clusters
- Short petiole
- Leaves elliptic
- Underside of leaves with hairs along the midvein

FLORIDA SWAMPPRIVET
*Forestiera segregata*

- Axillary flower clusters
- Leaves sessile
- Leaves obovate
- Underside of leaves glabrous
CHINESE PRIVET
Ligustrum sinense
CHINESE PRIVET
Ligustrum sinense

WALTER’S VIBURNUM
Viburnum obovatum
CHINESE PRIVET  
*Ligustrum sinense*

- Four petals/flower
- Leaf margin entire
- No short shoots
- Young stems hairy

WALTER’S VIBURNUM  
*Viburnum obovatum*

- Five petals/flower
- Leaf margin entire or serrate
- Short shoots
- Young stems and leaves with rusty scales
BEACH NAUPAKA
*Scaevola taccada*

INKBERRY
*Scaevola plumieri*
BEACH NAUPAKA  
*Scaevola taccada*

- Leaves longer (to 21 cm)
- Leaves rolled
- Leaves less succulent
- White fruit
- Green foliage

INKBERRY  
*Scaevola plumieri*

- Leaves shorter (to 10 cm)
- Leaves flat
- Leaves more succulent
- Black fruit
- Yellow-green foliage
BEACH NAUPAKA
*Scaevola taccada*

INKBERRY
*Scaevola plumieri*
Invasive, beach Naupaka (Scaevola taccada) growing with native Inkberry (Scaevola plumieri).
BEACH NAUPAKA

Scaevola taccada
BEACH NAUPAKA
Scaevola taccada

SEVENYEAR APPLE
Genipa clusiifolia
BEACH NAUPAKA
Scaevola taccada

SEVENYEAR APPLE
Genipa clusiifolia
**BEACH NAUPAKA**  
*Scaevola taccada*

- Leaves opposite
- Black fruit (green when immature)
- Fruit larger (6-10cm)
- Flowers actinomorphic

**SEVENYEAR APPLE**  
*Genipa clusiifolia*

- Leaves alternate (but densely clustered)
- White fruit
- Fruit smaller
- Flowers zygomorphic

- Leaves opposite
- Black fruit (green when immature)
- Fruit larger (6-10cm)
- Flowers actinomorphic
LANTANA
Lantana strigocamara

PINELAND LANTANA
Lantana depressa
**LANTANA**
*Lantana camara*

- Obtuse leaf base
- Leaves more or less flat
- Orange or multi-colored flowers

**PINELAND LANTANA**
*Lantana depressa*

- Acute leaf base
- Leaves folded along midrib
- All flowers yellow
LANTANA
Lantana camara
HEAVENLY BAMBOO
*Nandina domestica*

DEVIL’S WALKINGSTICK
*Aralia spinosa*
HEAVENLY BAMBOO
*Nandina domestica*

DEVIL’S WALKINGSTICK
*Aralia spinosa*
HEAVENLY BAMBOO
*Nandina domestica*

- Leaflet margin entire
- Stem and leaves unarmed
- Red berry

DEVIL’S WALKINGSTICK
*Aralia spinosa*

- Leaflet margin serrate
- Stem and leaves armed with prickles
- Purple/black drupe
DEVL'S WALKINGSTICK
Aralia spinosa
HEAVENLY BAMBOO

*Nandina domestica*

*Nandina domestica*

*Photo by Betty Wargo*
SILVERTHORN
Elaeagnus pungens

GUM BULLY
Sideroxylon lanuginosum
**SILVERTHORN**  
*Elaeagnus pungens*

- Twigs and underside of leaf with silvery and rusty scales
- Fruit a large berry covered with scales
- No milky sap

**GUM BULLY**  
*Sideroxylon lanuginosum*

- Twigs and underside of leaf with soft hairs
- Fruit a black berry
- Milky sap
JAVA PLUM
Syzygium cumini

FALSE MASTIC
Sideroxylon foetidissimum
JAVA PLUM  
*Syzygium cumini*

- Black fruit
- Entire leaf margin
- Opposite leaves
- Lateral leaf veins quite faint

FALSE MASTIC  
*Sideroxylon foetidissimum*

- Yellow fruit
- Wavy leaf margin
- Alternate leaves
- Lateral leaf veins more apparent
JAVA PLUM
Syzygium cumini

FALSE MASTIC
Sideroxylon foetidissimum
CARROTWOOD
*Cupaniopsis anacardioides*

PARADISE TREE
*Simarouba glauca*
CARROTWOOD
Cupaniopsis anacardioides

PARADISE TREE
Simarouba glauca
CARROTWOOD  
*Cupaniopsis anacardioides*

- Leaves with 4-12 leaflets
- Leaves green when young
- Leaves yellowish-green
- Inner bark orange
- Orange, 3-lobed fruit

PARADISETREE  
*Simarouba glauca*

- Leaves with 9-21 leaflets
- Leaves red-orange when young
- Leaves dark green
- Inner bark not orange
- Purplish/black fruit
CARROTWOOD
Cupaniopsis anacardioides

PARADISE TREE
Simarouba glauca
STRAWBERRY GUAVA
Psidium cattleianum

POSSUMHAW
Viburnum nudum
STRAWBERRY GUAVA  
*Psidium cattleianum*

- Crushed leaves fragrant
- Flowers/fruits axillary
- Berries yellow or red
- Berries with persistent, fleshy sepals at apex

POSSUMHAW  
*Viburnum nudum*

- Leaves not fragrant
- Flowers/fruits terminal
- Drupes purplish black
- Drupes without sepals at apex
STRAWBERRY GUAVA
Psidium cattleianum

WHITE STOPPER
Eugenia axillaris
STRAWBERRY GUAVA
Psidium cattleianum

- Yellowish to red berry
- Pedicels 1-2 cm long, stout
- Leaves mostly obovate
- Short acuminate leaf apex

WHITE STOPPER
Eugenia axillaris

- Black berry
- Pedicels <0.5 cm long
- Leaves ovate to elliptic
- Acute leaf apex
SURINAM CHERRY
Eugenia uniflora

WHITE STOPPER
Eugenia axillaris
SURINAM CHERRY
Eugenia uniflora

WHITE STOPPER
Eugenia axillaris
**SURINAM CHERRY**  
*Eugenia uniflora*

- Large, red ‘ribbed’ berry
- Pedicels >0.5 cm long
- Petiole very short (2-5 mm)

**WHITE STOPPER**  
*Eugenia axillaris*

- Small, black berry
- Pedicels <0.5 cm long
- Petiole longer and reddish
GUAVA
Psidium guajava

POND APPLE
Annona glabra
GUAVA
*Psidium guajava*

POND APPLE
*Annona glabra*
**GUAVA**
*Psidium guajava*

- Opposite leaves
- Leaf veins prominent
- Fruit with persistent, fleshy sepals at the apex

**POND APPLE**
*Annona glabra*

- Alternate leaves
- Leaf veins obscure
- Fruit without persistent sepals
CAMPHOR TREE
*Cinnamomum camphora*

SWAMP BAY
*Persea palustris*
**CAMPHOR TREE**  
*Cinnamomum camphora*

- Crushed leaves have a strong camphor smell
- Glaucous leaf underside
- Three veins at leaf base
- Fruit with a cupule

**SWAMP BAY**  
*Persea palustris*

- Crushed leaves have a bay leaf smell
- Pubescent leaf underside
- One vein at leaf base
- Fruit lacking a cupule
**LAUREL FIG**  
*Ficus microcarpa*

- Smaller leaves (4-6 cm long)
- Veins obscure
- Lowest pair of veins at a sharper angle than rest
- Figs ca. 1 cm long

**STRANGLER FIG**  
*Ficus aurea*

- Larger leaves (6-12 cm long)
- Veins yellowish
- Lowest pair of veins not different
- Figs ca. 2 cm long
LAUREL FIG
*Ficus microcarpa*

STRANGERL FIG
*Ficus aurea*
LEAD TREE
*Leucaena leucocephala*

WILD TAMARIND
*Lysiloma latisiliquum*
LEAD TREE
*Leucaena leucocephala*

- Leaflet very asymmetrical
- Legume narrower
- 10 stamens/flower
- Stipules inconspicuous

WILD TAMARIND
*Lysiloma latisiliquum*

- Leaflet slightly asymmetrical
- Legume wider
- >10 stamens/flower
- Stipules conspicuous, large on new growth
LEAD TREE
*Leucaena leucocephala*

WILD TAMARIND
*Lysiloma latisiliquum*

Bobby Hattaway / www.discoverlife.org
LEAD TREE
*Leucaena leucocephala*

- Gland at top of petiole (under first leaflets) on lead tree
- Stipules at base of new leaves on wild tamarind

WILD TAMARIND
*Lysiloma latisiliquum*
**BRAZILIAN PEPPER**
*Schinus terebinthifolia*

**DAHOON**
*Ilex cassine*

- Recent name change to match latin gender of *Schinus*
  - ... *folius* to ... *folia*
BRAZILIAN PEPPER
Schinus terebinthifolia

- Compound leaf
- Crushed leaves have a pungent odor
- Drupes with a single seed
- Drupe without a black dot on top

DAHOON
Ilex cassine

- Simple leaf
- Crushed leaves are odorless
- Drupes with four seeds
- Fruit with a black dot on top (persistent stigma)
WHITE MULBERRY

*Morus alba*

RED MULBERRY

*Morus rubra*
**WHITE MULBERRY**  
*Morus alba*

- Upper leaf surface glabrous
- Lower leaf surface with hairs on veins or glabrous
- Leaf apices abruptly acuminate
- Leaves usually dark green

**RED MULBERRY**  
*Morus rubra*

- Upper leaf surface scabrous (with short hairs)
- Lower leaf surface covered with soft hairs throughout
- Leaf apices conspicuously acuminate
- Leaves usually mid-green
WHITE MULBERRY
Morus alba

RED MULBERRY
Morus rubra
PAPER MULBERRY
*Broussonetia papyrifera*

RED MULBERRY
*Morus rubra*
**PAPER MULBERRY**
*Broussonetia papyrifera*

- Clonal, thicket forming
- Small twigs pubescent
- Petioles often longer, up to the length of the leaf
- Leaves usually dull green

**RED MULBERRY**
*Morus rubra*

- Solitary
- Small twigs glabrous, or with only a few hairs
- Petioles 2 to 2.5 cm long
- Leaves usually mid-green
**SISAL HEMP**
*Agave sisalana*

- Leaves entire
- Leaves larger
  - 90-130 cm long
  - 9-12 cm wide
- Upper leaf surface flat

**FALSE SISAL**
*Agave decipiens*

- Leaves w/ recurved teeth
- Leaves smaller
  - 70-100 cm long
  - 7-10 cm wide
- Upper leaf surface concave
Ferns are a primitive plant group that do not produce flowers or fruits. The leaves of ferns are often called fronds. Leaflets are called pinnae (1st order segments) or pinnules (2nd order or greater segments).
SWORD FERN
*Nephrolepis cordifolia*

WILD BOSTON FERN
*Nephrolepis exaltata*
**SWORD FERN**  
*Nephrolepis cordifolia*

- Roots with tubers
- Scales on rachis two colors
- Pinnae (leaflets) blunt-tipped

**WILD BOSTON FERN**  
*Nephrolepis exaltata*

- Roots lacking tubers
- Scales on rachis one color
- Pinnae more pointed at apex
SWORD FERN
*Nephrolepis cordifolia*

WILD BOSTON FERN
*Nephrolepis exaltata*
SWORD FERN
Nephrolepis cordifolia

PLUME POLYPODY
Pecluma plumula
**SWORD FERN**  
*Nephrolepis cordifolia*

- Rarely epiphytic
- Pinnae serrate
- Kidney-shaped indusium

**PLUME POLYPODY**  
*Pecluma plumula*

- Usually epiphytic
- Pinnae entire
- No indusium
SWORD FERN
Nephrolepis cordifolia

PLUME POLYPODY
Pecluma plumula
HERBS and GRASSES
RATTLEBOX
Sesbania punicea

BLADDERPOD
Sesbania vesicaria
RATTLEBOX
*Sesbania punicea*

- Plants woody
- Flowers yellowish in center, but without distinctive eye
- Fruit 4-angled

BLADDERPOD
*Sesbania vesicaria*

- Plants mainly herbaceous
- Flowers yellow to tricolored with a distinctive yellow eye
- Fruit flattened (2-angled)
RATTLEBOX
*Sesbania punicea*

BLADDERPOD
*Sesbania vesicaria*
PERUVIAN PRIMROSEWILLOW
Ludwigia peruviana

ANGLESTEM PRIMROSEWILLOW
Ludwigia leptocarpa
**PERUVIAN PRIMROSEWILLOW**  
*Ludwigia peruviana*

- Overall larger plant/shrub
- Larger flower
- Usually 4 petals
- Fruits square, broad, to 3 cm long

**ANGLESTEM PRIMROSEWILLOW**  
*Ludwigia leptocarpa*

- Smaller plant/herb
- Smaller flower
- Usually 5 petals
- Fruits narrowly cylindrical, to 5 cm long
PERUVIAN PRIMROSEWILLOW
*Ludwigia peruviana*

ANGLESTEM PRIMROSEWILLOW
*Ludwigia leptocarpa*
PRAXELIS
Praxelis clematidea

BLUE MISTFLOWER
Conoclinium coelestinum
• Crushed leaves have a pungent odor of cat urine
• Phyllaries deciduous (absent in fruit)
• Flower heads more than 0.5 cm long

• Crushed leaves may be fragrant, but not of cat urine
• Phyllaries persistent (present in fruit)
• Flower heads less than 0.5 cm long
Grasses (Poaceae) have a special leaf structure consisting of

1) the **blade** – the part of the leaf above the sheath,
2) the **sheath** – the lower part of the leaf that envelops the stem,
3) the **ligule** – a flap-like membrane or line of hairs on the inside of the leaf at the junction of the blade and the sheath.
COGON GRASS
*Imperata cylindrica*

BROOMSEDGE BLUESTEM
*Andropogon virginicus*
COGON GRASS
*Imperata cylindrica*

- Rhizomatous
- Midvein of leaf white and often offset

BROOMSEDGE BLUESTEM
*Andropogon virginicus*

- Clumping
- Midvein of leaf usually centered
COGON GRASS
*Imperata cylindrica*

BROOMSEDGE BLUESTEM
*Andropogon virginicus*
COGON GRASS
*Imperata cylindrica*

YELLOW INDIAN GRASS
*Sorghastrum nutans*
**COGON GRASS**
*Imperata cylindrica*

- Midvein of leaf white and often offset
- Ligule short (0.2-3.5 mm)
- Large fuzzy panicle of flowers, silvery white and cylindrical

**YELLOW INDIAN GRASS**
*Sorghastrum nutans*

- Midvein of leaf usually centered
- Ligule long (2-6 mm)
- Plume-like panicle of flowers, bronze yellow
COGON GRASS
*Imperata cylindrica*

YELLOW INDIAN GRASS
*Sorghastrum nutans*
TORPEDO GRASS

*Panicum repens*

MAIDENCANE

*Panicum hemitomon*
• Plants shorter (20-90 cm tall), leaves narrower
• Rhizomes sharp-pointed
• Inflorescence broader

• Plants taller (50-200 cm tall), leaves broader
• Rhizomes not sharp
• Inflorescence narrow (to 1 cm wide)
WEST INDIAN MARSH GRASS
*Hymenachne amplexicaulis*

MAIDENCANE
*Panicum hemitomon*
WEST INDIAN MARSH GRASS
Hymenachne amplexicaulis

• Ligules 1-2.5 mm long
• Internodes with solid white pith
• Base of leaf blade clasping

MAIDENCANE
Panicum hemitomon

• Ligules <1 mm long
• Internodes without solid white pith
• Base of leaf cordate
WEST INDIAN MARSH GRASS
*Hymenachne amplexicaulis*

MAIDENCANE
*Panicum hemitomon*
WEST INDIAN MARSH GRASS
Hymenachne amplexicaulis

AMERICAN CUPSACLE
Sacciolepis striata
WEST INDIAN MARSH GRASS
*Hymenachne amplexicaulis*

- Ligules 1-2.5 mm long
- Internodes with solid white pith
- Base of leaf blade clasping

AMERICAN CUPSCALE
*Sacciolepis striata*

- Ligules <1 mm long
- Internodes without solid white pith
- Base of leaf cordate
BURMA REED
Neyraudia reynaudiana

COMMON REED
Phragmites australis
- Ligules on both sides of leaf (line of hairs around collar)
- Glabrous internodes

COMMON REED
Phragmites australis

- Ligule only on inside of leaf
- Pubescent internodes
NAPIER GRASS
Pennisetum purpureum

COMMON REED
Phragmites australis
NAPIER GRASS
Pennisetum purpureum

- Ligules 1.5 to 5 mm long
- Inflorescence a dense terminal panicle

COMMON REED
Phragmites australis

- Ligules about 1 mm long
- Inflorescence a bushy panicle
NAPIER GRASS
Pennisetum purpureum

COMMON REED
Phragmites australis
Ligule on Napier grass

Ligule on common reed
GOLDEN BAMBOO
*Phyllostachys aurea*

SWITCHCANE
*Arundinaria gigantea*
GOLDEN BAMBOO
Phyllostachys aurea

- Stem flattened or grooved on one side just above the node
- Swollen band just below node

SWITCHCANE
Arundinaria gigantea

- Stem round
- Node may be swollen, but lacking a swollen band just below the node
TROPICAL NUTRUSH
Scleria microcarpa

TALL NUTGRASS
Scleria triglomerata
**TROPICAL NUTRUSH**
*Scleria microcarpa*

- Leaf sheath strongly winged
- Achenes in multiple lax racemes
- Achenes with a large “cupula” at base

**TALL NUTGRASS**
*Scleria triglomerata*

- Stem sharply angled, but leaf sheath not winged
- Achenes in 1 to several clusters
- Achenes with 3-lobed disk at base and subtended by bracts, but no “cupula”
TROPICAL NUTRUSH
Scleria microcarpa

TALL NUTGRASS
Scleria triglomerata
VINES
CHINESE WISTERIA

*Wisteria sinensis*

AMERICAN WISTERIA

*Wisteria frutescens*
**CHINESE WISTERIA**  
*Wisteria sinensis*

- Leaves longer (to 40 cm)
- Flowers just before or as leaves are emerging
- Inflorescence longer (up to 40 cm long)

**AMERICAN WISTERIA**  
*Wisteria frutescens*

- Leaves shorter (to 30 cm)
- Flowers after leaves have appeared
- Inflorescence shorter (up to 25 cm long)
CHINESE WISTERIA
Wisteria sinensis

AMERICAN WISTERIA
Wisteria frutescens
AIR-POTATO
Dioscorea bulbifera

FLORIDA YAM
Dioscorea floridana
• Stems have aerial tubers  
• Leaves larger, 9-11 nerved  
• Secondary veins often prominent

• Stems lacking tubers  
• Leaves smaller, 7 nerved  
• Secondary veins less prominent
JAPANESE HONEYSUCKLE
Lonicera japonica

- Leaves pubescent or glabrous, but not glaucous
- Leaf apex acute to slightly acuminate
- Flowers white to creamy yellow

TRUMPET HONEYSUCKLE
Lonicera sempervirens

- Leaves with a glaucous underside
- Leaf apex rounded
- Flowers red
JAPANESE HONEYSUCKLE
Lonicera japonica

TRUMPET HONEYSUCKLE
Lonicera sempervirens
BEACH VITEX
Vitex rotundifolia

RAILROAD VINE
Ipomoea pes-caprae ssp. brasiliensis
**BEACH VITEX**  
*Vitex rotundifolia*

- Opposite leaves
- Woody growth
- Panicles of smaller blue flowers

**RAILROAD VINE**  
*Ipomoea pes-caprae ssp. brasiliensis*

- Alternate leaves
- Herbaceous
- Solitary, “morning glory” flowers
BEACH VITEX
Vitex rotundifolia

RAILROAD VINE
Ipomoea pes-caprae ssp. brasiliensis
THANK YOU!!

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