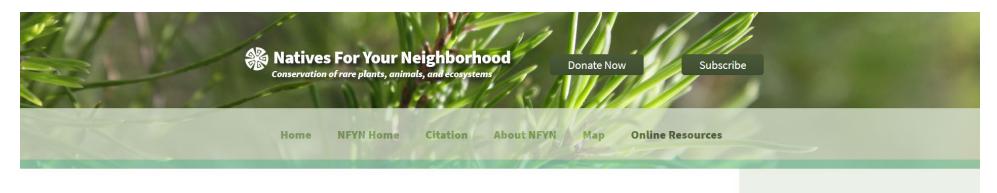
Natives For Your Neighborhood



A Resource to Help Change a Hobby for a Few into a Powerful Conservation Tool of Many.

Find Native Plants!

George D. Gann

Chief Conservation Strategist, The Institute for Regional Conservation International Policy Lead, Society for Ecological Restoration

May 5, 2020





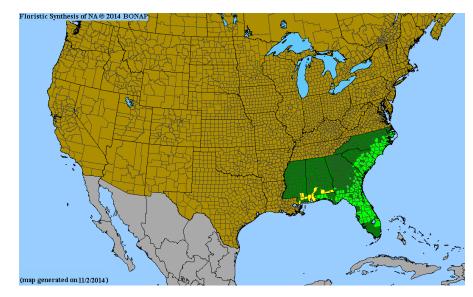
Acknowledgements

- Cara Abbott, for moderating and setting up!
- All the IRC folks, past and present, and all our conservation partners.
- **Photographers**, including Roger Hammer, Keith Bradley, Shirley Denton, James Johnson, and many others.
- NFYN Sponsors, past and present.

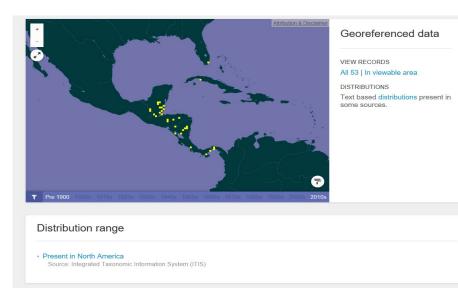


Why Natives For Your Neighborhood?

South & North Range Limits in Florida



Gordonia lasianthus (BONAP.org)





K. Bradley

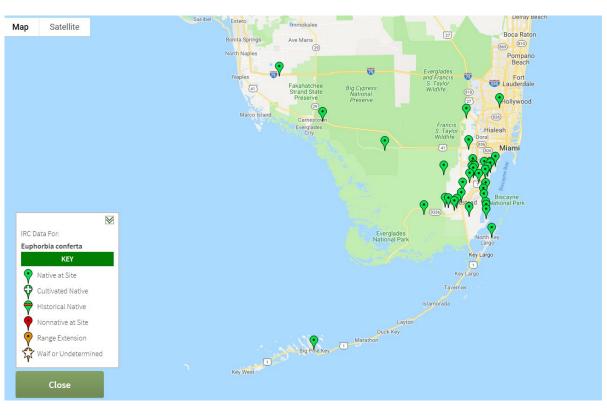


C. McCartney

Oncidium ensatum (GBIF.org)

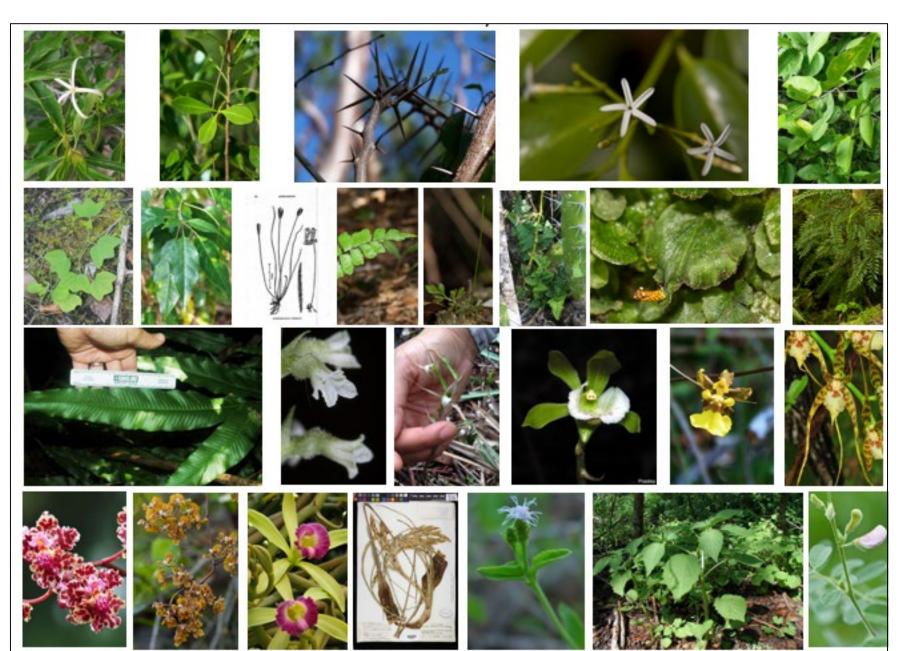
Euphorbia conferta (Chamaesyce conferta)

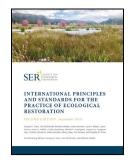




South Florida and Florida Endemics, >110 taxa in South Florida

Local Biodiversity Matters!

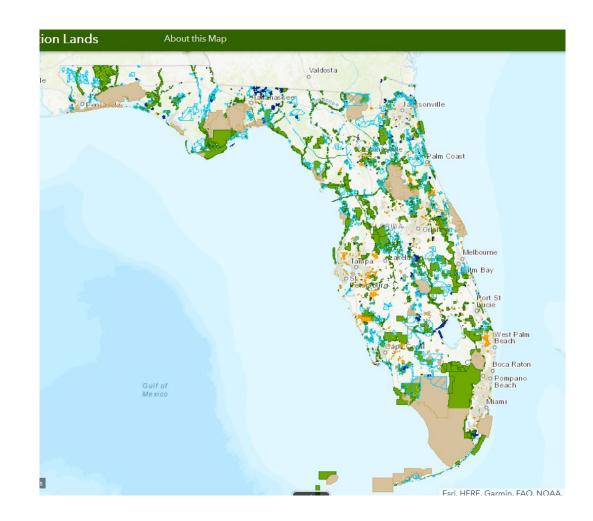




The Challenge

- **1.** Ecosystem degradation, damage, and destruction diminish the biodiversity, functioning, and resilience of ecosystems.
- 2. This, in turn, negatively affects the **resilience and sustainability** of social-ecological systems.
- **3. Protection** of remaining native ecosystems is critical but insufficient.
- 4. Global society must also secure a **net gain in** the extent and functioning of **native ecosystems** by investing in environmental repair including ecological restoration.
- 5. This repair must be implemented at **multiple scales** to achieve measurable effects worldwide.

Recognized Conservation Lands



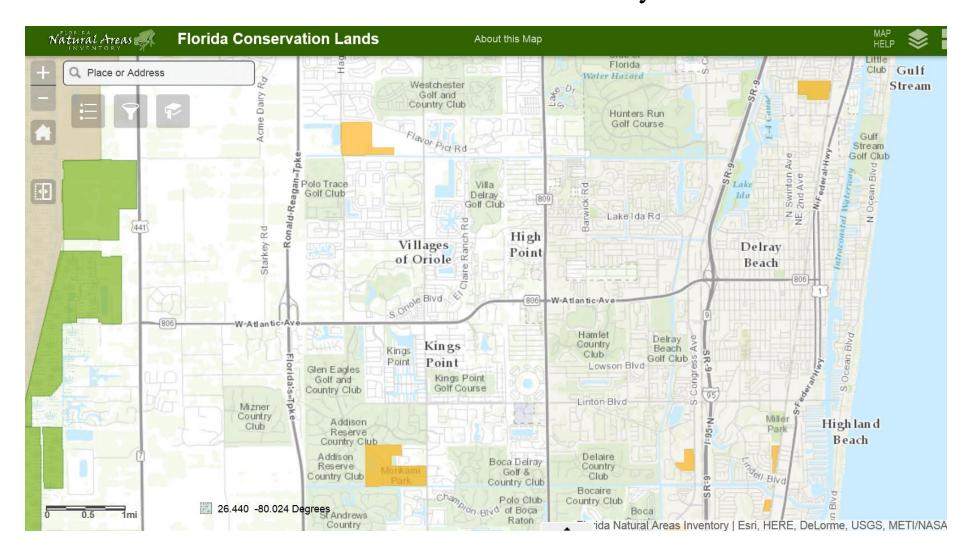
Non-submerged (in acres)

Federal	4,254,502
State	3,731,754
WMDs	1,884,261
Local	505,697
Private	197,147
<u>Priv. Mit. Banks</u>	<u>85,706</u>
Total	6,408,819
Percent	18.40%

Comparison: current 2020 target for UN Convention on Biological Diversity is 17% for terrestrial lands.

Florida Natural Areas Inventory, November 2, 2019 https://www.fnai.org/webmaps/ConLandsMap/

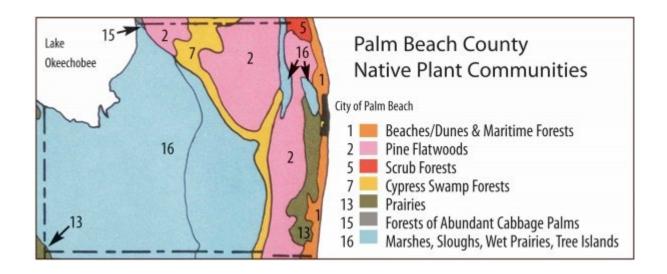
Our Local Reality



Conservation areas in and around Delray Beach.

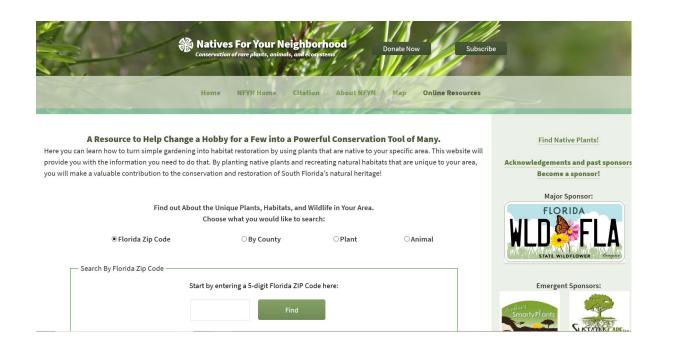
How Can We:

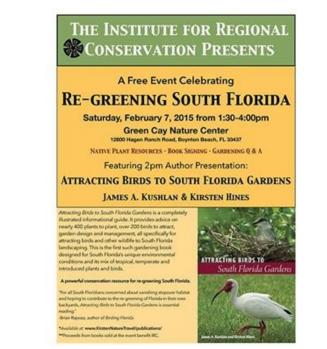
Improve our sense of place? Increase success of native plantings? Connect conservation areas?



About 800 species of native plants have been recorded in Palm Beach County, a little more than one half of the South Florida total and about one quarter of the Florida total. Some of those are now extirpated, that is, regionally extinct. As individuals we can play a role in conserving what remains and restoring some of what has been lost.

What We Can Do:





Increase plant and animal habitat and connectivity throughout the urban and suburban matrix

- Through use of native plants within their native ranges
- Gardening for wildlife





This can happen virtually anywhere – at residences and office complexes, in parks, and even in medians. And by increasing, improving and connecting existing protected areas.



We Must Restore Degraded Ecosystems, Small and Large, Fragmented and Connected



NPS.gov / Park Home / Learn About the Park / Science & Research / Research Programs / Comprehensive Everglades Restoration Plan (CERP)

Comprehensive Everglades Restoration Plan (CERP)



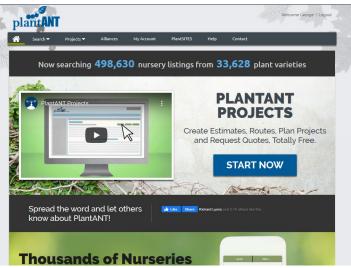
Image Courtesy of EvergladesPlan.org

The CERP was authorized by Congress in 2000 as a plan to "restore, preserve, and protect the south Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection." At a cost of more than \$10.5 billion and with a 35+ year time-line, this is the largest hydrologic restoration project ever undertaken in the United States.



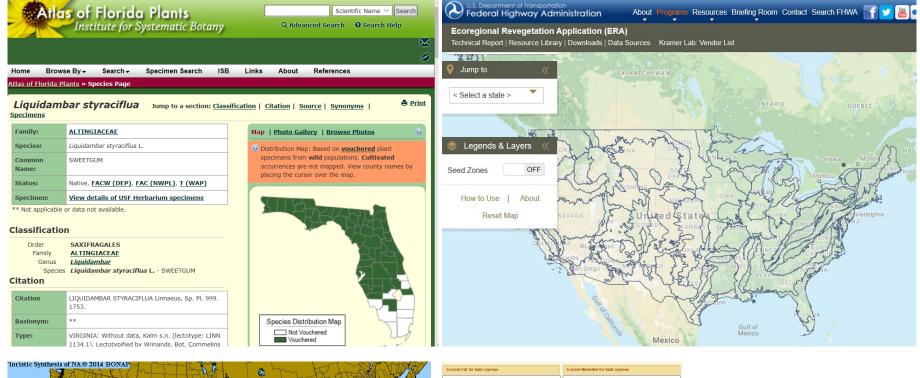
Native Plant and Wildlife Data

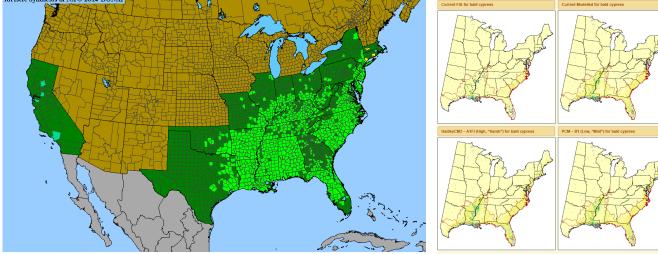






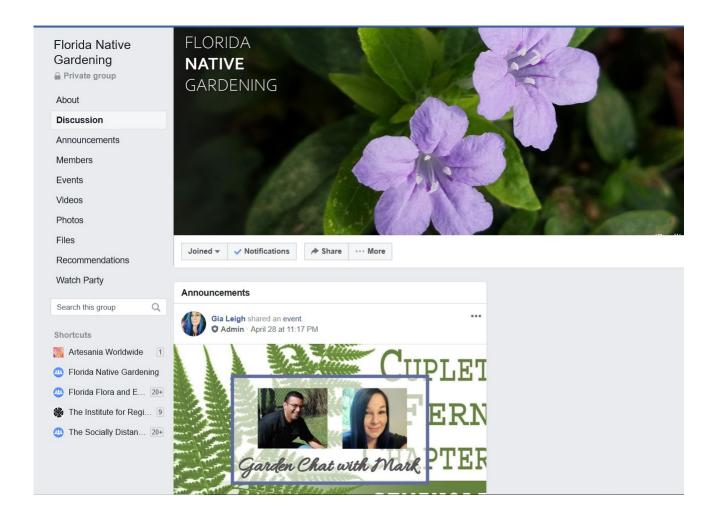






Current *Taxodium distichum* Models in USDA Climate Change Tree Atlas

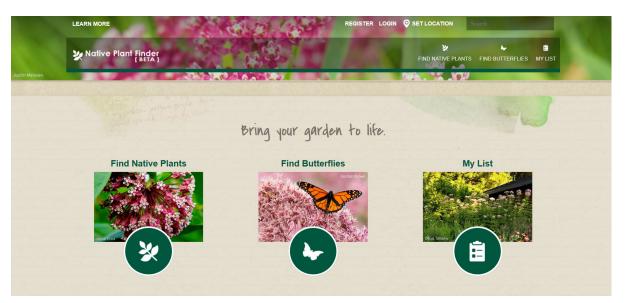
State and National Distribution Data



Facebook Pages



How can we better link national and local resources for native landscaping and restoration?

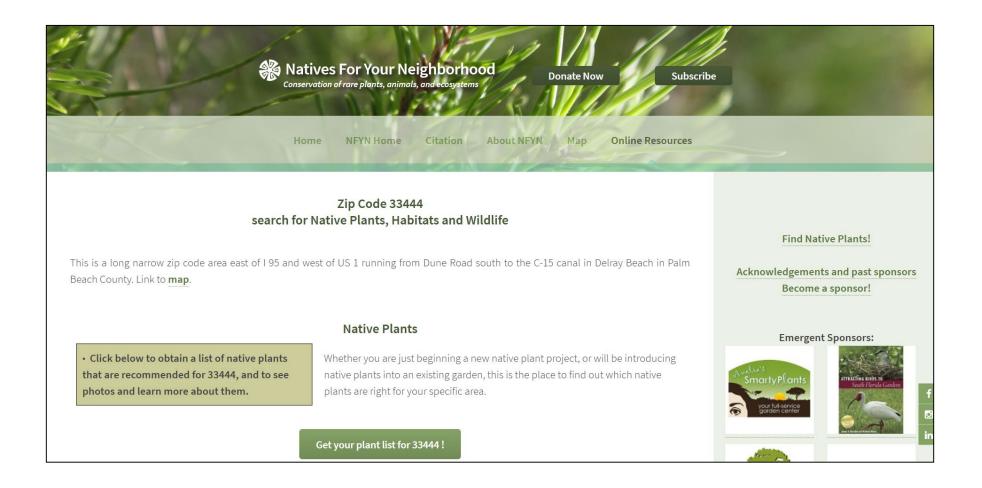


National Wildlife Federation



National Audubon Society

Plant Agents



Precise Data Encouraging the Use of Native Species Within Their Native Ranges (2019, >71,000 users, >742,000 page views) We Want to Increase Success

- 1) In the Garden
- 2) For Conservation

Natives For Your Neighborhood: The Data



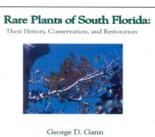
The Floristic Inventory of South Florida Conservation of rare plants, animals, and ecosystems





80 Species To Be Added to Florida's Endangered Species List Premier Issue of *Orion Afield* (1997)

- FISF assesses status of native species, identified rare species.
- Determines effectiveness of existing conservation areas, including small conservation areas, to conserve native plant species.
- Identifies opportunities to restore rare plants and their habitat.



George D. Gann Keith A. Bradley Steven W. Woodman



FREE IRC ZOOM WEBINAR Floristic Inventory of South Florida

With IRC's Chief Conservation Strategist, George Gann



Tuesday, May 12th, 2020 1:00 pm – 2:00 pm

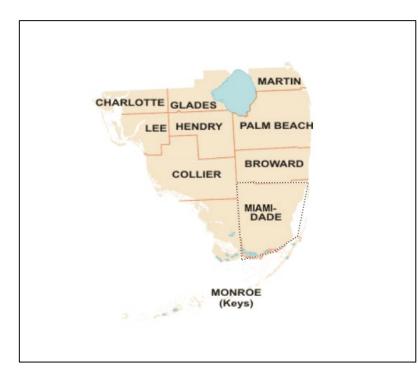
Go to <u>https://zoom.us/j/92842955504</u> Click "Join Meeting" Enter 933-8204-9297

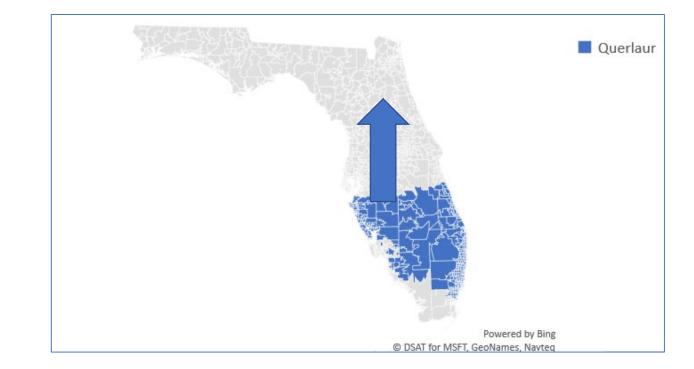


Mapping Zip Codes to North

Original Scope

Laurel Oak – Quercus laurifolia



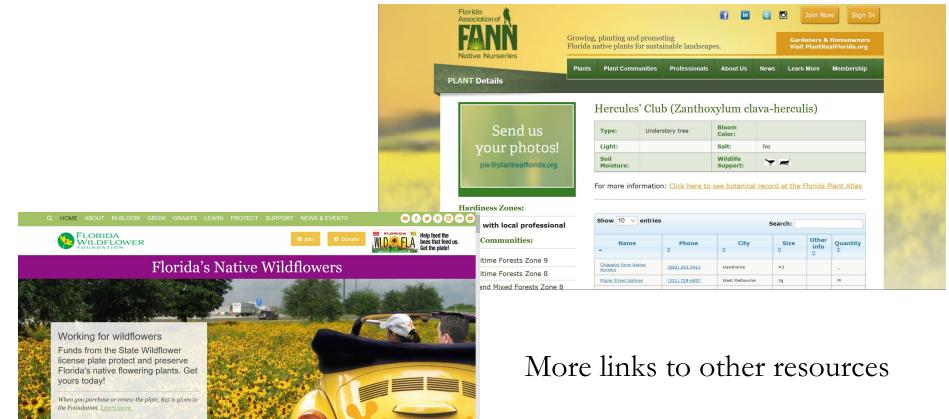




Who We Are V What We Do V Native Plants Resources V Events Chapters Join / Support V

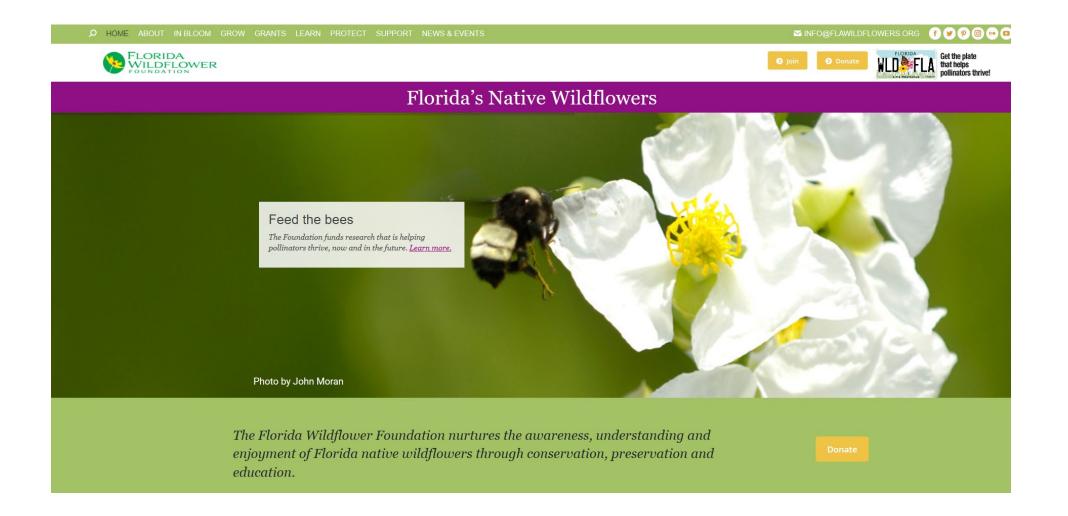


Building Statewide Partnerships



FLORIDA

W/I



New Support: Florida Wildflower Foundation

How Does It Work?

County Lists – Ecological generalist with broad ranges (95% rule)

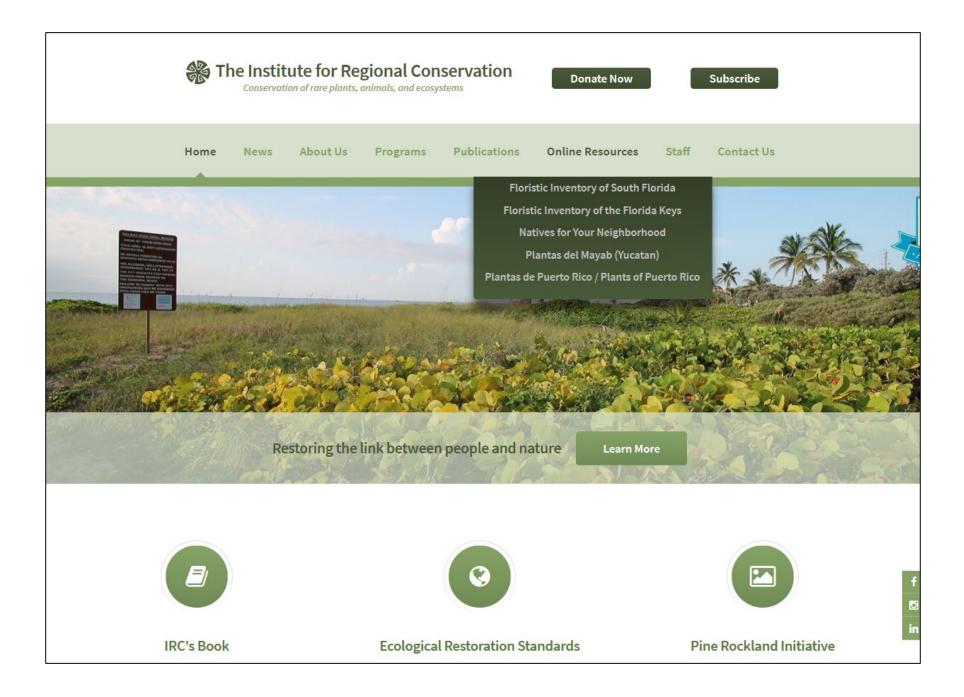
ZIP Code Lists – Ecological generalists + generalists within local habitats

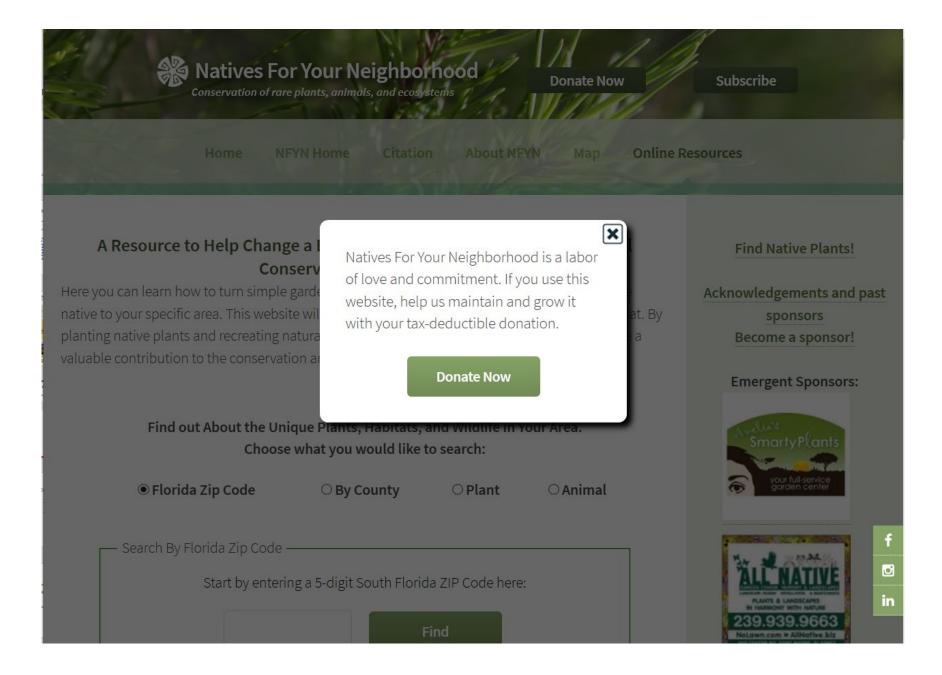
Habitat Lists – Generalists + habitat specialists within historical range within ZIP Code













Find out About the Unique Plants, Habitats, and Wildlife in Your Area. Choose what you would like to search:					FLORIDA
	● Florida Zip Code	⊖ By County	○ Plant	⊖Animal	
1	🦳 Search By Florida Zip Code ————				
Start by entering a 5-digit Florida ZIP Code here:					Emergent Sponsors:
	334	44 × Find			And Lucid Smarty Plants

Zip Code 33444 search for Native Plants, Habitats and Wildlife

This is a long narrow zip code area east of 1 95 and west of US 1 running from Dune Road south to the C-15 canal in Delray Beach in Palm Beach County. Link to **map**.

Native Plants

 Click below to obtain a list of native plants that are recommended for
 33444, and to see photos and learn more about them. Whether you are just beginning a new native plant project, or will be introducing native plants into an existing garden, this is the place to find out which native plants are right for your specific area.

Get your plant list for 33444 !

Advance search for plants

Habitats

To take gardening with natives a step further, you can learn about the plant and animal



Habitats

• You can try your hand at ecological restoration in your yard or project site by recreating a native habitat.

• Click below to view a list of some native habitats for 33444. To take gardening with natives a step further, you can learn about the plant and animal habitats that are native to your area. Here you can also learn more about native habitats and ecosystems, and get a list of plants native to this habitat that are recommended for your zip code.

Read more about restoring native habitats in our **Frequently Asked Questions section**, and learn how you can attract wildlife such as birds and butterflies to your yard.

Get your list of habitats for 33444 !

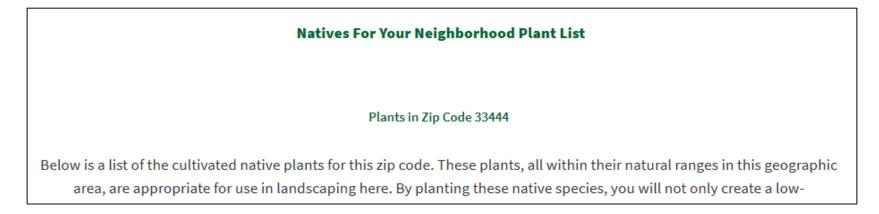
Wildlife

• Click the button below to learn about the wildlife that may be expected in your area and what native plants can be planted and habitats created to attract them.

Get your wildlife list for 33444 !









Shrubs and Woody Groundcovers



American beautyberry 🔳



Coastalplain St. John's-wort

Coastalplain staggerbush 🛆



Coco-plum



Common buttonbush 🔺

Common pawpaw, Netted pawpaw 🛆



Coralbean, Cherokee bean 🗉



Elderberry, American elder 🛆



Fetterbush 🛆

Firebush 🔳



Callicarpa americana

Hypericum brachyphyllum

Lyonia fruticosa

Chrysobalanus icaco

Cephalanthus occidentalis

Asimina reticulata

Erythrina herbacea

Sambucus nigra subsp. canadensis

Lyonia lucida

Hamelia patens var. patens

Please scroll to the bottom for more images.

Coastalplain staggerbush

Lyonia fruticosa

Ericaceae

General Landscape Uses: Accent shrub.

Availability: Grown by one or two native plant nurseries in central Florida.

Description: Medium erect shrub. Leaves about 1-2 inches long, covered with brown hairs when young.

Dimensions: About 4-6 feet in height. Usually taller than broad.

Growth Rate: Moderate.

Range: South Carolina and Georgia south to Miami-Dade and Collier counties.

♥♂ Map of select IRC data from peninsular Florida.

Map of suggested ZIP codes north to Indian River and Manatee counties.

Map of ZIP codes with habitat recommendations north to Martin and Charlotte counties.

Habitats: Pinelands and hammocks.

Soils: Moist to dry, well-drained sandy or limestone soils, with or without humusy top layer, acid pH.

Nutritional Requirements: Low to moderate; it can grow in nutrient poor soils or soils with some organic content.

Salt Water Tolerance: Low; does not tolerate flooding by salt or brackish water.

Salt Wind Tolerance: Low; salt wind may burn the leaves.

Drought Tolerance: Moderate to high; plants growing in extremely dry soils may die during extended periods of drought.

Light Requirements: Full sun.

Flower Color: White or pink.

Flower Characteristics: Showy.

Flowering Season: Spring-summer.

Fruit: Inconspicuous capsule.

Wildlife and Ecology: Provides some food and moderate amounts of cover for wildlife. Attracts bee pollinators.



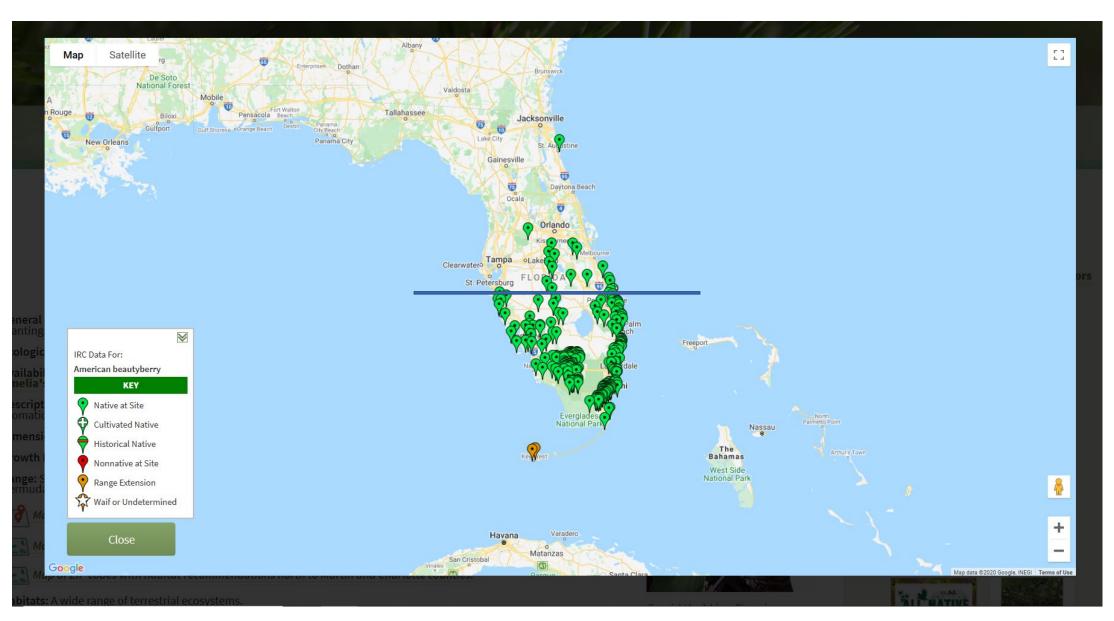
Copyright by: James Johnson, 2014 In habitat, Blazingstar Preserve, Palm Beach County, Florida Enlarge



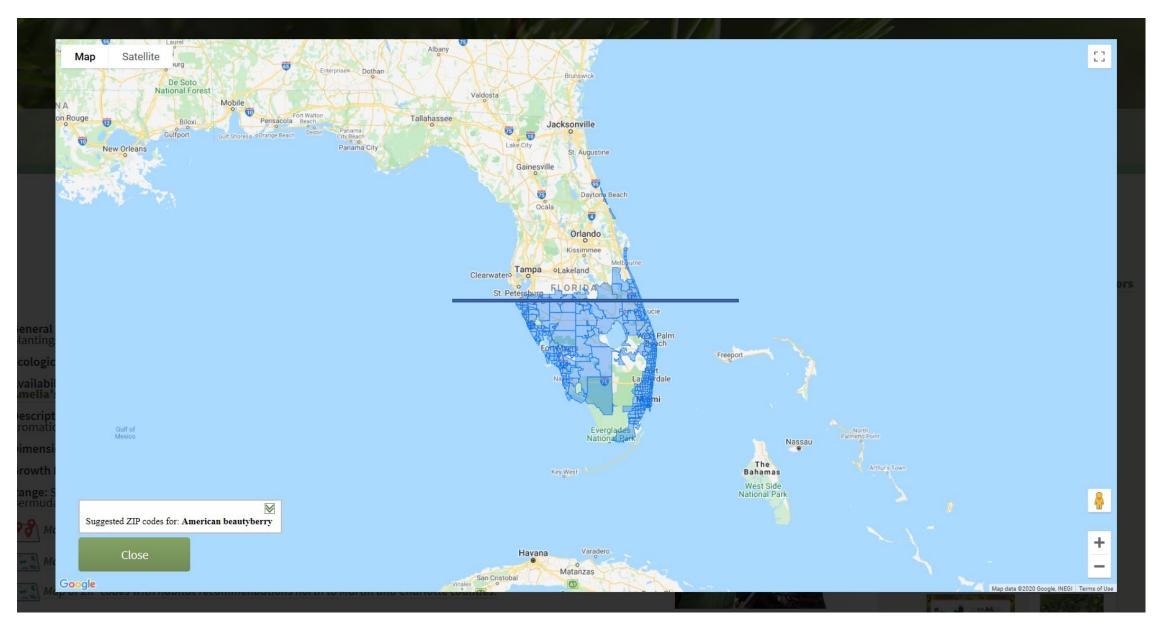
Pigeonplum, Tietongue Coccoloba diversifolia



American beautyberry Callicarpa americana



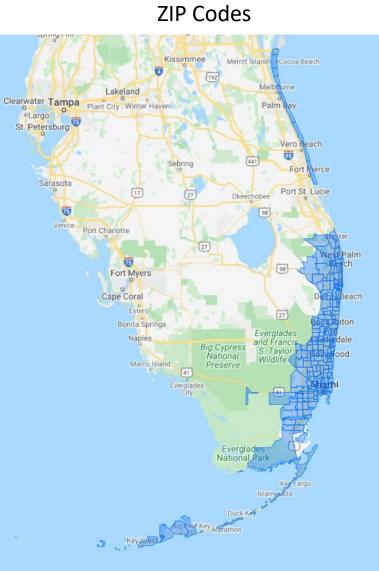
American beautyberry Callicarpa americana



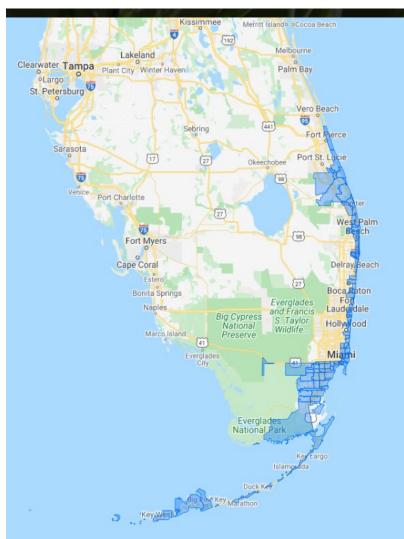
Paradisetree Simarouba glauca

Range





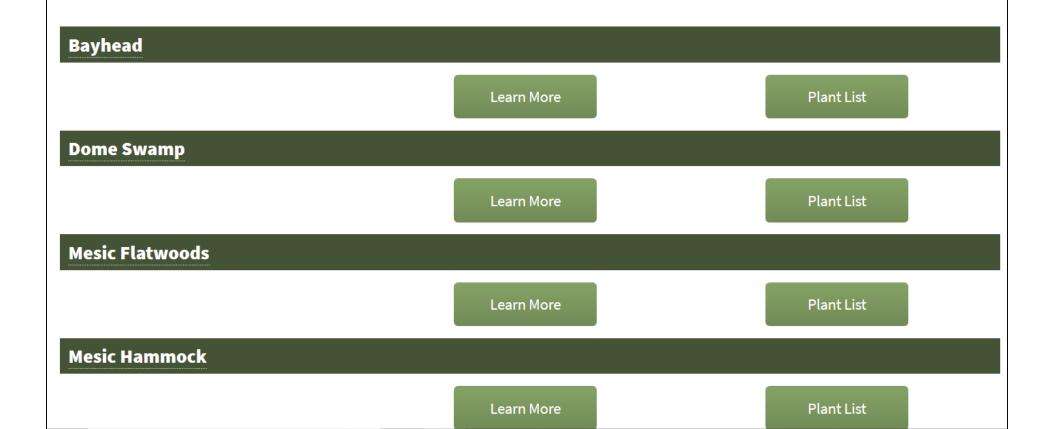
Habitat in ZIP Codes



In South Florida

Habitats in Zip Code 33444

To take gardening with natives a step further, you can learn about the native plant habitats that are appropriate for your area. 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.

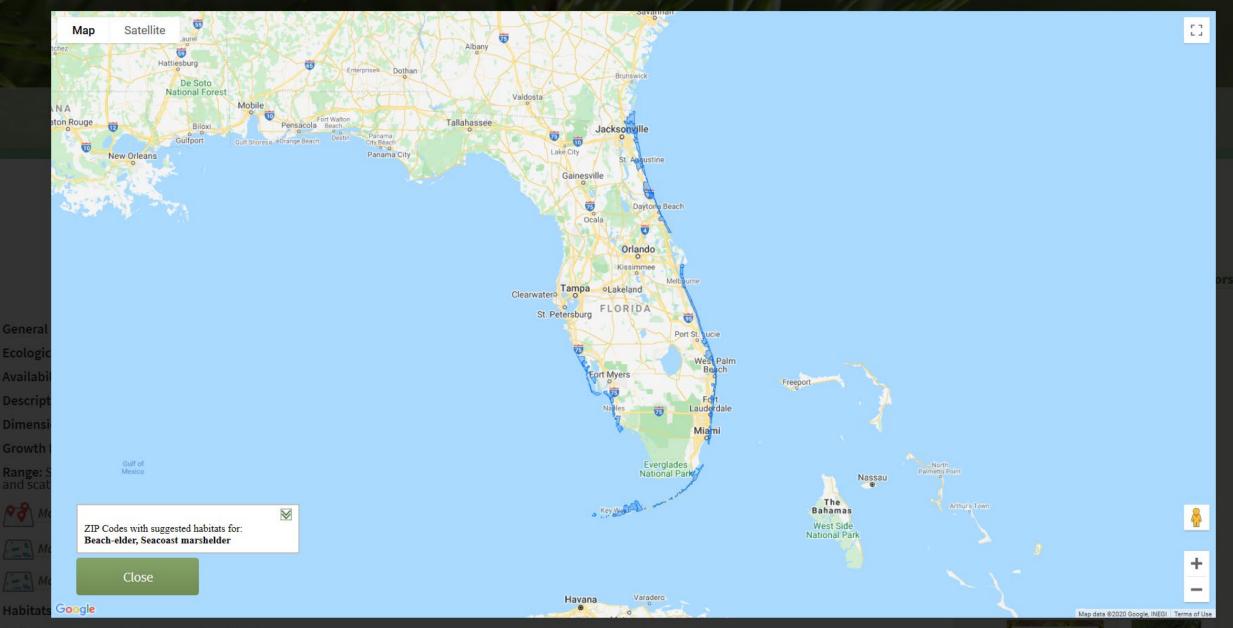


Habitats in Zip Code 33483

	Learn More	Plant List
Beach Dunes and Coastal Grasslands		
	Learn More	Plant List
Coastal Berm		
	Learn More	Plant List
Coastal Interdunal Swale		
	Learn More	Plant List
Coastal Strand		
	Learn More	Plant List
Freshwater Tidal Swamp		
	Learn More	Plant List

Shrubs and Woody Groundcovers Beach-elder, Seacoast marshelder △ Iva imbricata Inkberry, Beachberry, Gullfeed A Scaevola plumieri Pricklypear 🛆 **Opuntia humifusa** Sea-lavender, Sea-rosemary A **Tournefortia gnaphalodes** Herbs Beachgrass, Bitter panicgrass, Bitter panicum ▲ **Panicum amarum** Beach ragweed, Coastal ragweed △ Ambrosia hispida

Beach-elder, Seacoast marshelder Iva imbricata



in

THE MATTINE

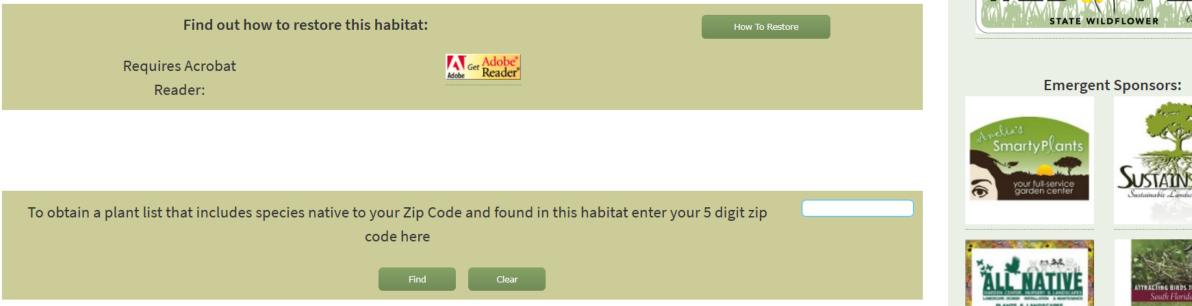
Soils: Moist, well-drained sandy soils, without humus.

Habitats

Rockland Hammock

Rockland Hammocks are densely wooded forests that are dominated by tropical trees, and a few trees of temperate origin. They are home to numerous shrubs, vines, herbs, epiphytes, and ferns. Hammocks are shady and humid, and have an organic substrate.

A brief description of this habitat as given by the **Florida Natural Areas Inventory** is: Flatland with limestone substrate; mesic; subtropical; rare or no fire; mixed tropical hardwoods, often with live oak.



Find Native Plants!

Acknowledgements and past sponsors Become a sponsor!

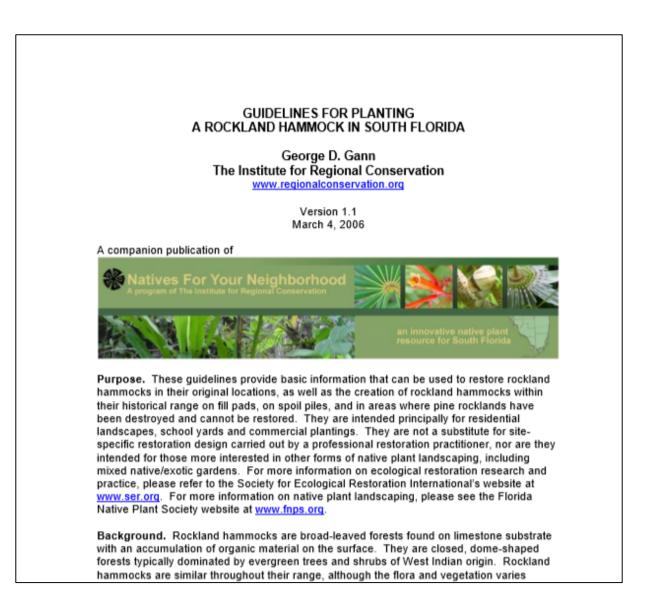
Major Sponsor:





O

in



Place and Habitat-based Planting Guides





A Rain Garden is a planted area of your yard where rain water collects. Instead of running off of a driveway or other hard, impervious surface and in to a storm drain or canal unfiltered, rain water collected in a rain garden has time to absorb into the ground, assisted by the root systems of the plants.

Benefits include reducing stormwater flooding, improving water quality, increasing infiltration into the aquifer, and attracting wildlife benefits when native plants are used.

(image source: The Nature Conservancy)

Learn more about your local water resources, using rain gardens to manage stormwater and attract wildlife, and the benefits of rain barrels in the presentation below.

The Institute for Regional Conservation created a list of rain garden plants for Hollywood residents. Find more native plants using their tool Natives for Your Neighborhood.

Wondering where to find those native plants? The Broward Native Plant Society, Coontie Chapter, have created <u>a list</u> of local nurseries that sell native plants.



Rain Barrels

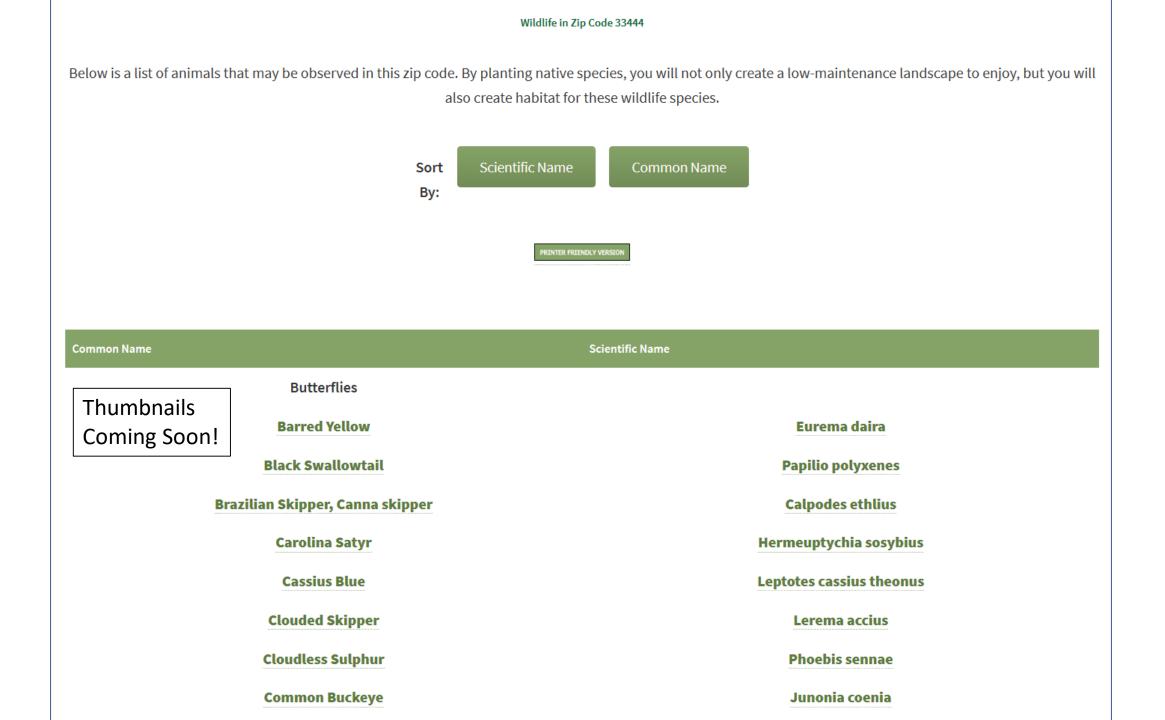
Nationally, 30% of residential water use is outdoors. In Florida that average can be as much as 50% primarily for landscape irrigation. That water must be extracted from our aquifer, treated, and distributed to our homes all of which uses energy.

Save water, energy and money by installing a rain barrel on your home.

In addition to the aforementioned savings, rain barrels also help with stormwater



Rain Gardens



Please scroll to the bottom for more images.

Julia Heliconian

Dryas iulia

Nymphalidae

Description:

Medium-sized butterfly with a wingspan up to 3-5/8 inches. The male is bright orange-brown with several small black spots near the tips of the forewing and a narrow black border on the outer edge of the hindwing. The female is a duller orange-brown, with a black band across the forewing and more black markings. The underside of the hindwing in both sexes has a pale band through the center. The caterpillar has an orange head with black patches and two black horns on top. The body is usually brown or black with white patches and many long, black, needlelike spines arranged in rows. Some populations have white bodies with dark markings. The chrysalis is brown with a few silver markings.



Copyright by: Beryn Harty, 2012

Range:

South Florida and southern Texas; West Indies, Mexico, Central America and South America; strays to the north in the summer as far as Nebraska and coastal areas of Georgia and South Carolina.

Distribution and Abundance in Florida:

Locally common all year in South Florida; common all year in the Keys. Caterpillars are present all year.

Habitat(s):

Hammock edges, pinelands and open, disturbed sites.

Reproduction:

Three or more broods per year. The elongated yellow eggs are laid singly on the new growth of host plants. Females will reject plants on which eggs have already been laid.

Natural History:

These butterflies are fast fliers, but have weak wingbeats. They "trap-line" by visiting the same flowers in sequence repeatedly during a single day or on several sequential days. Ants attracted by nectar glands on the leaves of host plants may eat the eggs or young caterpillars. Some host plants may develop structures that resemble eggs, which may cause females to avoid them.

Food:

Caterpillars feed on the leaves of host plants. Larval host plants include the native vines corkystem passionflower (Passiflora suberosa), maypop (Passiflora incarnata) and whiteflower passionflower (Passiflora multiflora var. multiflora) and the naturalized passion fruit (Passifora edulis). Native nectar plants include trees such as poisonwood (Metopium toxiferum), seagrape (Coccoloba uvifera) and smooth strongback (Bourreria succulenta); shrubs such as baycedar (Suriana maritima), common snowberry (Chiococca alba), shiny-leaved wild coffee (Psycotria nervosa), wild-sage (Lantana involucrata); wildflowers such as blue porterweed (Stachytarpheta jamaicensis), narrowleaf yellowtops (Flaveria linearis) and snow squarestem (Melanthera nivea); and vines such as yellowroot (Morinda royoc). Weedy native nectar plants include jackin-the-bush (Chromolaena odorata), sleepy morning (Waltheria indica) and Spanish-needles (Bidens alba var. radiata). Adults also will feed on the invasive shrubs latherleaf (Colubring asiatica) and shrubverbena (Lantang camara).

Comments:

Some people may develop a rash after handling caterpillars. For more information, visit the Florida Museum of Natural History's Florida Wildflowers & Butterflies website and Butterflies and Moths of North America.



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Copyright by: B Pupa



Advanced Search for Plants			
Zip Code:	33444		
Name (common or scientific):			
Light Preference:	Light Shade 🗸		
Soil:	Dry 🗸		
Form:	Shrub 🗸		
Drought Tolerance:	High 🗸		
Fruit:			
Wildlife Attractant:			
Flowers Significant:			
	Search		

33444, shrub, light shade, dry soils, high drought tolerance

 Widely cultivated Cultivated at native plant nurseries 		
Common Name	Scientific Name	20
Cabbage palm	Sabal palmetto	Par and
Common pawpaw, Netted pawpaw 🛆	Asimina reticulata	
Gopher-apple 🛆	Licania michauxii	
Saw palmetto	Serenoa repens	
Scrub palmetto 🛆	Sabal etonia	
Tough Florida bully 🛆	Sideroxylon tenax	





33444, shrub, light shade, moderate drought tolerance, wildlife attractant, significant flowers

- Widely cultivated
- △ Cultivated at native plant nurseries

Common Name

Fetterbush 🛆

Marlberry 🛆

Shiny-leaved wild coffee

St. Andrew's-cross

Twinberry, Simpson's stopper

White stopper

Scientific Name

Lyonia lucida

Ardisia escallonioides

Psychotria nervosa

Hypericum hypericoides

Myrcianthes fragrans

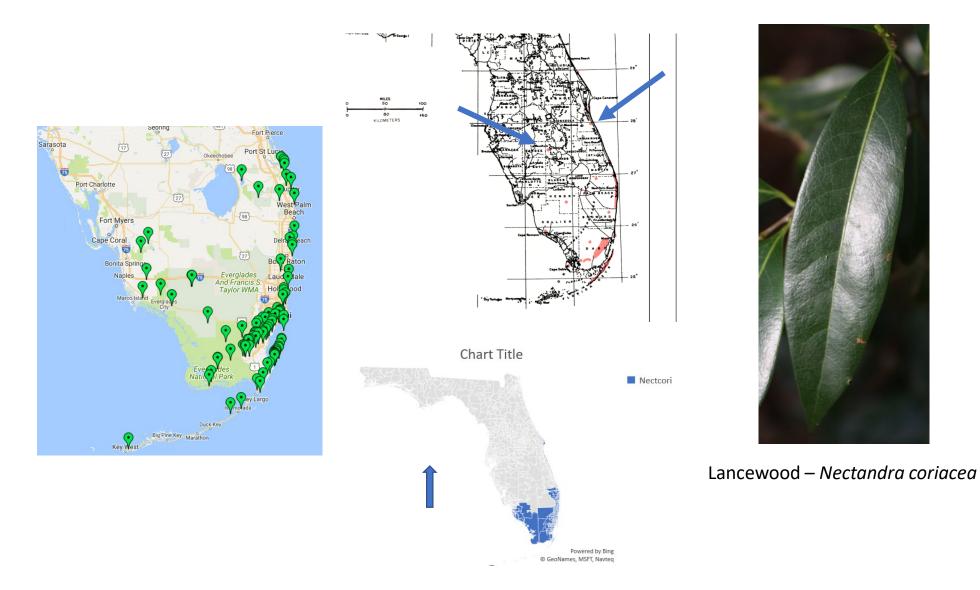
Eugenia axillaris



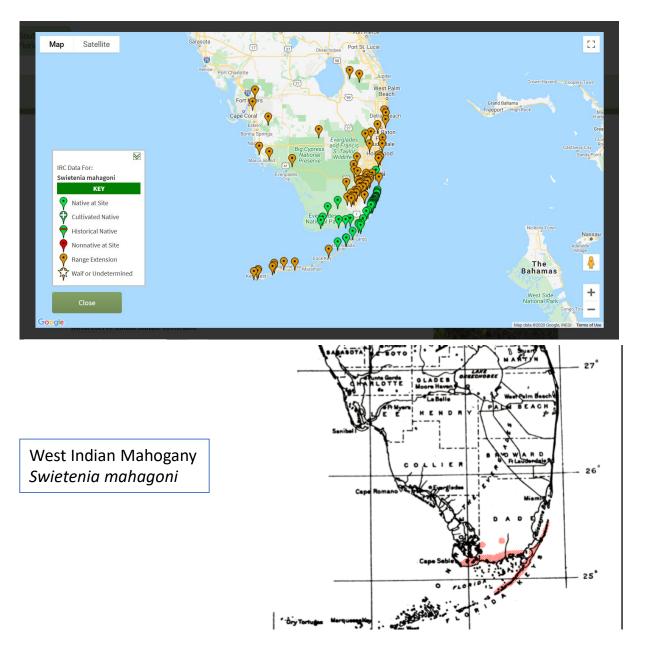




Plan for Change (e.g., Climate Change and Sea Level Rise)



And Be Thoughtful







Climate Change and Provenance

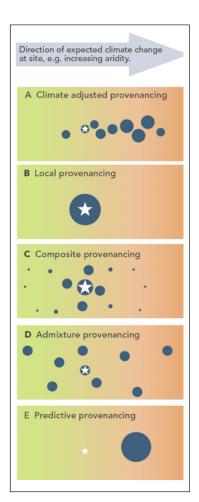


Figure 5. Provenancing strategies for revegetation, (Reproduced here from Prober et al 2015) The star indicates the site to be revegetated, and the circles represent native populations used as germplasm sources. The size of the circles indicates the relative quantities of germplasm included from each population for use at the revegetation site. In the case of the climate-adjusted provenancing the relative quantities of the germplasm from the various populations will depend upon factors such as genetic risks, and the rate and reliability of climate change projections. For simplicity this represents the major direction of climate change in a single dimension (e.g., aridity, to combine influences of increasing temperature and decreasing rainfall), but multiple dimensions could be considered as required.

Among other items, we are:

Considering **provenance issues** – note that this pertains within species ('assisted migration' is largely not accepted).

From Nany Shaw, USFS: "**Trailing edges** of a distribution relative to climate change are most vulnerable to loss of a species. Longevity, dispersal, breeding system etc., determine ability to adapt/migrate. When sourcing, consider material from currently adapted sources plus sources adapted to projected near future conditions to hopefully provide current adaptation plus ability to adapt."

In other words, for South Florida projects local propagules + propagules from the south are better than propagules from the north.

NFYN Encourages It is not Prescriptive

Bourreria succulenta

Boraginaceae

General Landscape Uses: Accent or specimen flowering shrub or small tree.

Ecological Restoration Notes: A relatively common mid-canopy or ecotonal species in rockland hammocks in the Florida Keys. Very rare elsewhere.

Availability: Native plant nurseries. Available in Fort Myers at All Native Garden Center and Plant Nursery (239-939-9663) and in Lake Worth at Indian Trails Native Nursery (561-641-9488).

Description: Large shrub or small tree with spreading branches that droop toward the tips. Trunks erect, about 2-6 inches in diameter. Bark thin, light brown tinged with red, slightly roughened. Leaves smooth, shining, about 2-3 inches long. The leaves can be hairy or even rough when plants are immature, sometimes leading this to be misidentified as the very rare B. radula.

Dimensions: Typically 10-15 feet in height; to 28 feet in South Florida. Can be as broad as tall in the sun, but usually taller than broad in the shade.

Growth Rate: Moderate.

Range: Monroe County Keys and Miami-Dade County; West Indies and northern South America. Very rare on the mainland south of the Miami River. For a digitized image of Elbert Little's Florida range map, visit the **Exploring Florida** website.

Map of select IRC data from peninsular Florida.

Habitats: Coastal hammocks.

Soils: Moist, well-drained limestone or calcareous sandy soils with humusy top layer.

Nutritional Requirements: Moderate; can grow in nutrient poor soils, but needs some organic content to thrive.

Salt Water Tolerance: Low; does not tolerate long-term flooding by salt or brackish water.

Salt Wind Tolerance: Moderate; grows near salt water, but is protected from direct salt spray by other vegetation.

Drought Tolerance: High; does not require any supplemental water once established.



Copyright by: George D. Gann in habitat, Everglades National Park, Key Largo, Florida, 2013

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THANKS !

