

# Ecosystems and Plants Native to the Palm Beach Barrier Island

Preservation Foundation of Palm Beach  
February 28, 2022



International Policy Lead

George D. Gann  
[www.regionalconservation.org](http://www.regionalconservation.org)  
[www.ser.org](http://www.ser.org)



Chief Conservation Strategist

## Acknowledgements

- **Amanda Skier, Susan Lerner** and the Preservation Foundation team.
- **All the IRC folks**, past and present, and all our **funders** and **conservation partners**.
- **Photographers**, including Roger Hammer, Keith Bradley, Shirley Denton, James Johnson, Beryn Harty, Mary Keim, Joe Mdo, and many others.

## Outline

- 1) Introduction and context
- 2) Brief ecological and human history of Palm Beach
- 3) Why does planting natives matter?
- 4) Using Natives For Your Neighborhood to make a difference

# United Nations Decade on Ecosystem Restoration 2021-2030



UNITED NATIONS DECADE ON  
**ECOSYSTEM  
RESTORATION**  
2021-2030



**Conservation Biology**

Research Note

### Vascular plant extinction in the continental United States and Canada

Wesley M. Knapp<sup>1</sup>, Anne Frances<sup>2</sup>, Reed Noss<sup>3</sup>, Robert F. C. Naeff<sup>4</sup>, Alan Weakley<sup>5</sup>, George D. Gann<sup>6</sup>, Bruce G. Baldwin<sup>7</sup>, James Miller<sup>8</sup>, Patrick McIntyre<sup>9</sup>, Brent D. Mishler<sup>10</sup>, Gerry Moore<sup>11</sup>, Richard G. Olden<sup>12</sup>, Anna Orson<sup>13</sup>, Kathryn Kennedy<sup>14</sup>, Boonie Hesketh<sup>15</sup>, and Daniel Ghosekump<sup>16</sup>

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**Abstract:** Extinction rates are expected to increase during the Anthropocene. Current extinction rates of plants and many animals remain unknown. We quantified extinctions among the vascular flora of the continental United States and Canada since European settlement. We compared rates of extirpation versus species by growing plant conservation status, including the degree and timing of the extinction, and the degree to which individual species. Extinction rates appear to vary widely, we developed an index of extinction intensity (IEI). The IEI ranges from 1 to 100, indicating increasing extinction risk. We found that IEI values are significantly higher for plants that are single authors. The IEI allowed us to compare extirpation rates. Our data suggest that 31 species and 14 subspecies are expected to be lost in the next 100 years. We found that IEI values are significantly higher for plants that are single authors. Some of these taxa exist in collections but are extinct in the wild. Most extinctions occurred in the west, but the extinction and extirpation of species is also occurring in the east. Many extirpations occur in areas that were once single-plant endemics, and many occurred outside recognized floristic borders. Given the paucity of data sources in many areas, particularly given the European settlement, the actual extinction rate of vascular plants is undoubtedly much higher than indicated here.

**Keywords:** conservation, extinction rate, rarity, single-plant endemics, taxonomic

**Article impact statement:** The number of presumed extirpated plants from the continental United States and Canada is much greater than previously estimated. North America's vascular flora is being lost at an alarming rate. Conservationists should focus on preventing extirpations, including the degree and timing of the extinction, and the degree to which individual species.

# The Institute for Regional Conservation Uniting Global Thinking with Local Expertise

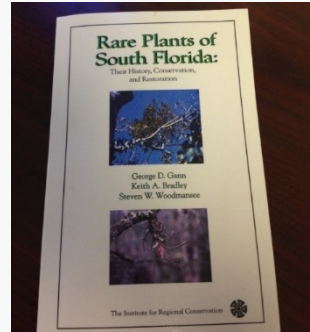
**Natives For Your Neighborhood**  
Conservation of rare plants, animals, and ecosystems

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### Eight Principles Underpinning Ecological Restoration

- 1 ENGAGES STAKEHOLDERS
- 2 DRAWS ON MANY TYPES OF KNOWLEDGE
- 3 IS INFORMED BY NATIVE REFERENCE ECOSYSTEMS, WHILE CONSIDERING ENVIRONMENTAL CHANGE
- 4 SUPPORTS ECOSYSTEM RECOVERY PROCESSES
- 5 IS ASSESSED AGAINST CLEAR GOALS AND OBJECTIVES USING MEASURABLE INDICATORS
- 6 SEEKS THE HIGHEST LEVEL OF RECOVERY POSSIBLE
- 7 GAINS CLIMATIC VALUE WHEN APPLIED AT LARGE SCALES
- 8 IS PART OF A CONTINUUM OF RESTORATIVE ACTIVITIES

SER SOCIETY FOR ECOSYSTEM RESTORATION



South Florida

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

**GUIDELINES FOR PLANTING A PINE ROCKLAND IN MIAMI-DADE COUNTY, FLORIDA**

George D. Gann, Jennifer Possley, Steven W. Woodmansee

Version 2.0  
October 2020

CONNECT • PROTECT • NETWORK

**Why plant a pine rockland?** Pine rockland is a critically imperiled ecosystem that has been heavily impacted by urban development and agriculture. Found only in South Florida and the Bahama Archipelago, less than 2% of the original pine rocklands remain in Miami-Dade County outside of Everglades National Park. Pine rocklands of the lower Florida Keys have also been heavily impacted by development, sea level rise, and flooding from hurricanes and tropical storms. Creating a pine rockland is not easy or simple, but it can be extremely rewarding. Pine rocklands provide wonderful habitats for native plants and wildlife, including many species of very rare plants, butterflies, bees and other pollinators, and songbirds. If well-planned and managed they can also be aesthetically pleasing.



**Plantas de la Isla de Puerto Rico**  
Plants of the Island of Puerto Rico

Un servicio para la conservación de flora / A conservation service for the flora

**The Institute for Regional Conservation**

Amigos de Plantas de Puerto Rico / Friends of Plants of Puerto Rico

George Gann

FAVORITES: News Feed, Messages, Events, Sale Groups

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GROUPS: Amigos de Plantas..., Florida Flora and..., PLANY - Plantas..., Urban Paradise G...

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TAGS: Add tags

### A Gardening Guide for Living on the Barrier Island


A handbook produced by The Ocean Ridge Banders...

### native gardening - THE POWERFUL CONSERVATION TOOL OF MANY

By George Gann

\* Native plant gardening and ecological restoration may be more closely linked than you think. A coastal garden at a dune in Ocean Ridge, Florida, uses local native plants to restore a coastal shrubland. It is both beautiful and restorative. Photo by George Gann.

Looking at the many woes of the world, from COVID-19 to climate change, it is understandable to feel overwhelmed. Yet, we know from ample evidence that the sum of individual actions is as important as those of government, large businesses or big conservation organizations. This is especially true in urban and suburban areas, where our collective individual actions may make the difference between conservation success – or the lack thereof. This need for individual action has never been more urgent, no matter where you live, and is embraced by Plant America with Trees, an emphasis of National Garden Clubs Inc. At the international level, there is tremendous work being done to address not one, but three global environmental challenges: countering climate change, preventing the extinction crisis, and providing adequate ecosystem services to meet the needs of a sustainable world. Meeting these challenges requires transformational change; business as usual just won't work. We know that traditional conservation alone, what we think of as "protection" or "preservation," is insufficient to meet these challenges. Instead, we need



- **Native ecosystem:** An ecosystem comprising organisms that are known to have evolved locally or have recently migrated from neighboring localities due to changing environmental conditions including climate change. In certain circumstances, traditional cultural ecosystems or semi-natural ecosystems are considered to be native ecosystems. Presence of nonnative species or the expansion of ruderal species in native ecosystems are forms of degradation. (Gann et al. 2019)

- **Native species:** Taxa considered to have their origins in a given region or that have arrived there without recent (direct or indirect) transport by humans. Among ecologists, debate exists over how precisely to define this concept. (Gann et al. 2019)



Knowledge. Stewardship. Culture.

The Preservation Foundation of Palm Beach protects and celebrates the **architectural, botanical, and cultural heritage** of Palm Beach. Through advocacy initiatives, educational programs, architectural resources, and cultural events, the Foundation's goal is to inspire the community to learn about and protect the places that make Palm Beach special.

Palm Beach through the intertwined lenses of  
History, Nature, and Sustainability

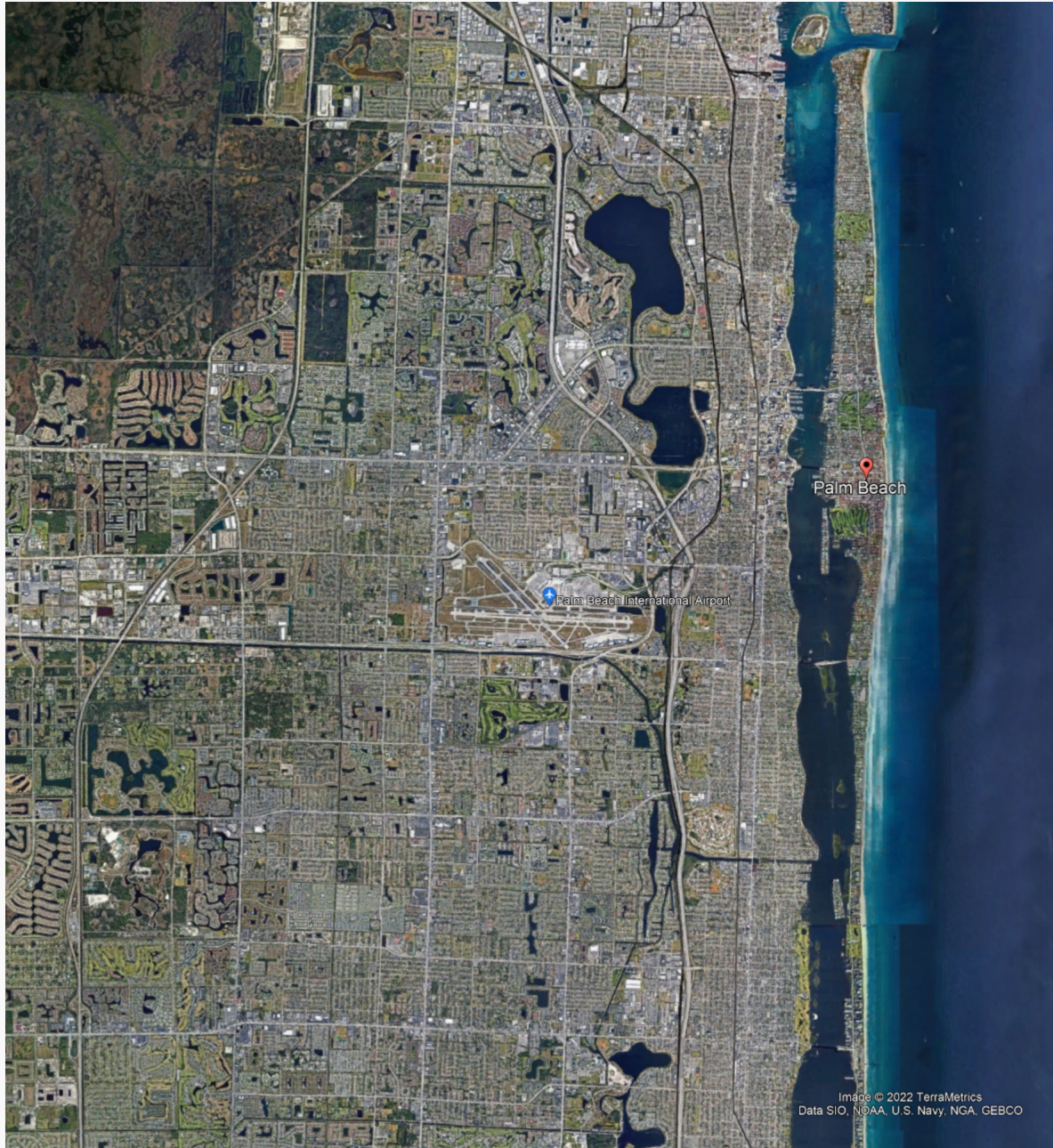
Understanding the past creates a sense of belonging in the present and guides our path to build a better future.

### Interact, Learn, and Grow

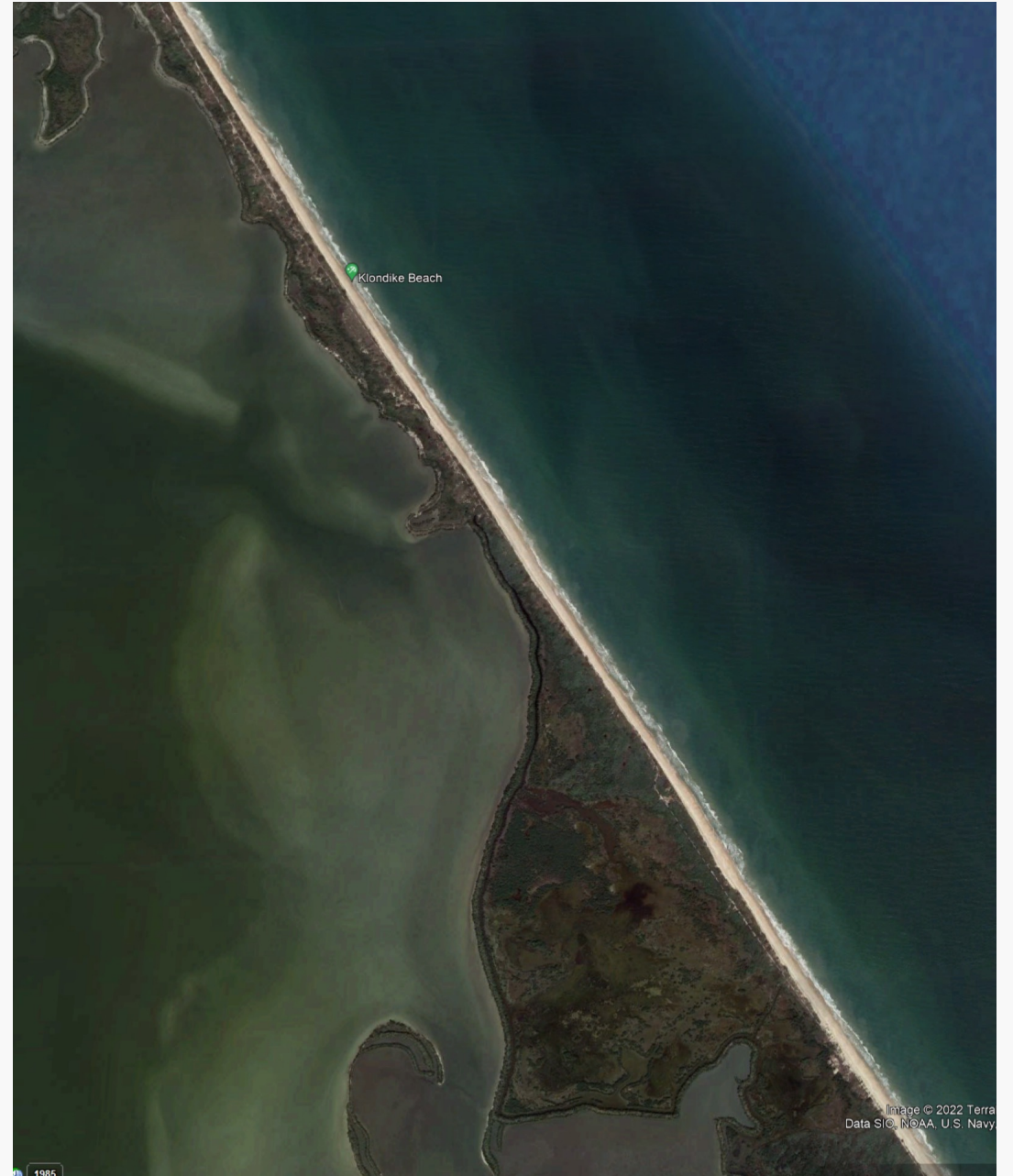
- ▶ Access to our shared history at the Little Red Schoolhouse, one of the last vestiges of the Pioneer era in Palm Beach
- ▶ Expanded educational programming through the creation of a Coastal Restoration Center
- ▶ Interpretative historical and botanical signage







Palm Beach, Singer Island to north



Canaveral National Seashore

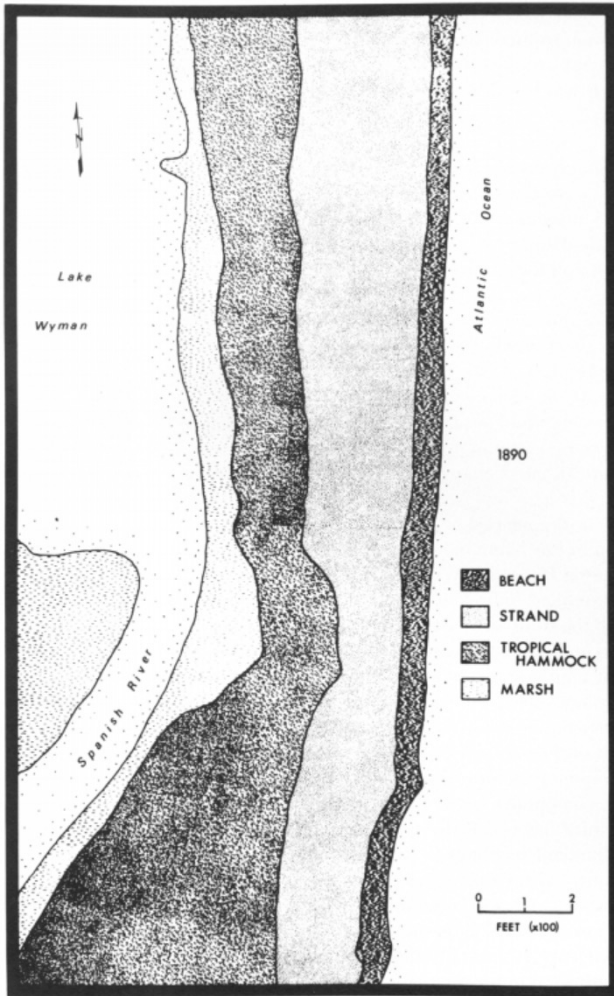


FIG. 1. Interpretation of the plant associations on the Boca Hammock region in 1890. Based on 1845 and 1870 surveys and 1940 aerial photography.

PRESENT ASSOCIATIONS—The fresh water marsh that previously existed in the Intracoastal Waterway basin no longer exists. A mangrove association has replaced this fresh water community. Mangrove invasion took place largely after 1921 (Long, 1921) when the Hillsboro Canal was opened. A survey by Butler in

Boca Hammock, Boca Raton



Canaveral National Seashore



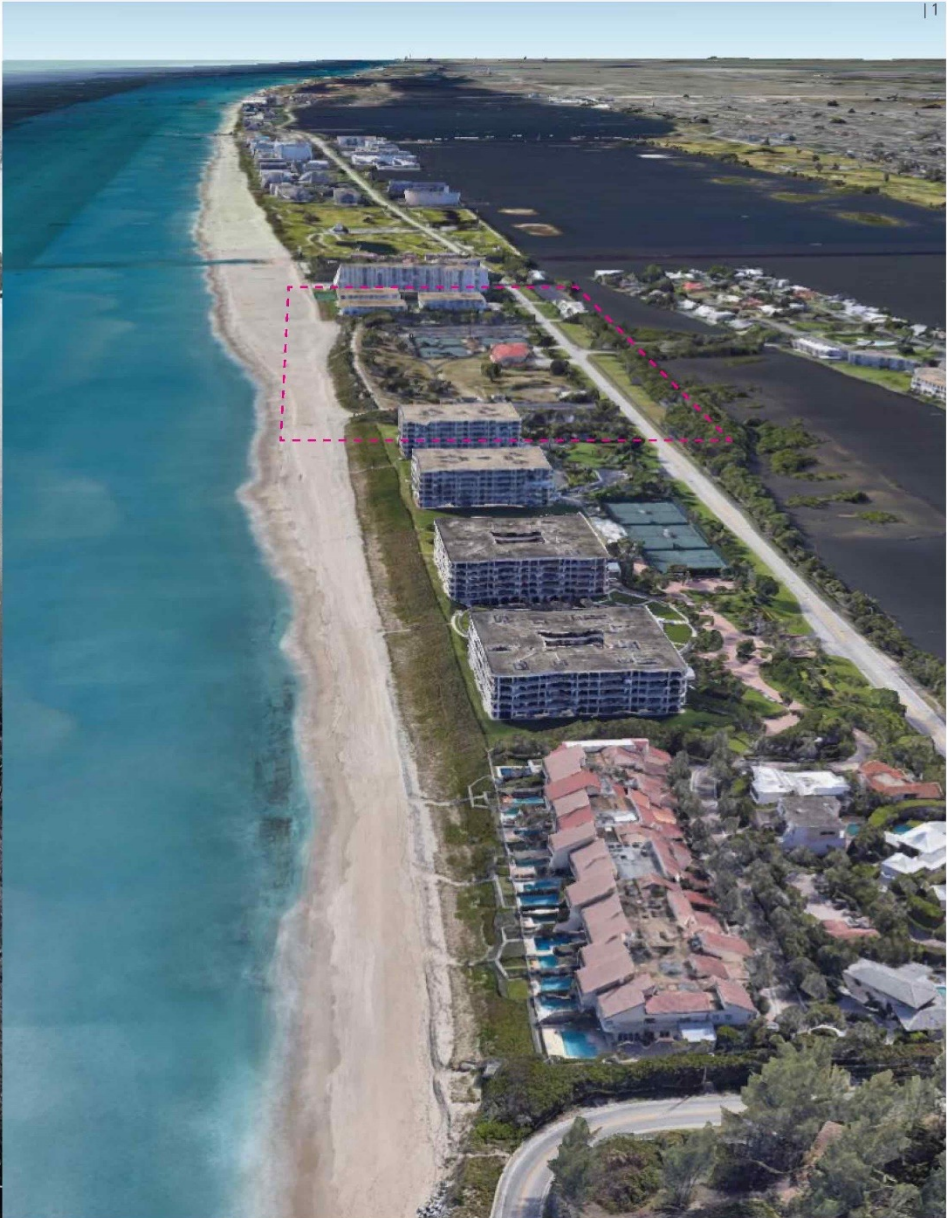
Washington Oaks Gardens State Park, Palm Coast

# Phipps Ocean Park: Then & Now



1949

jungles

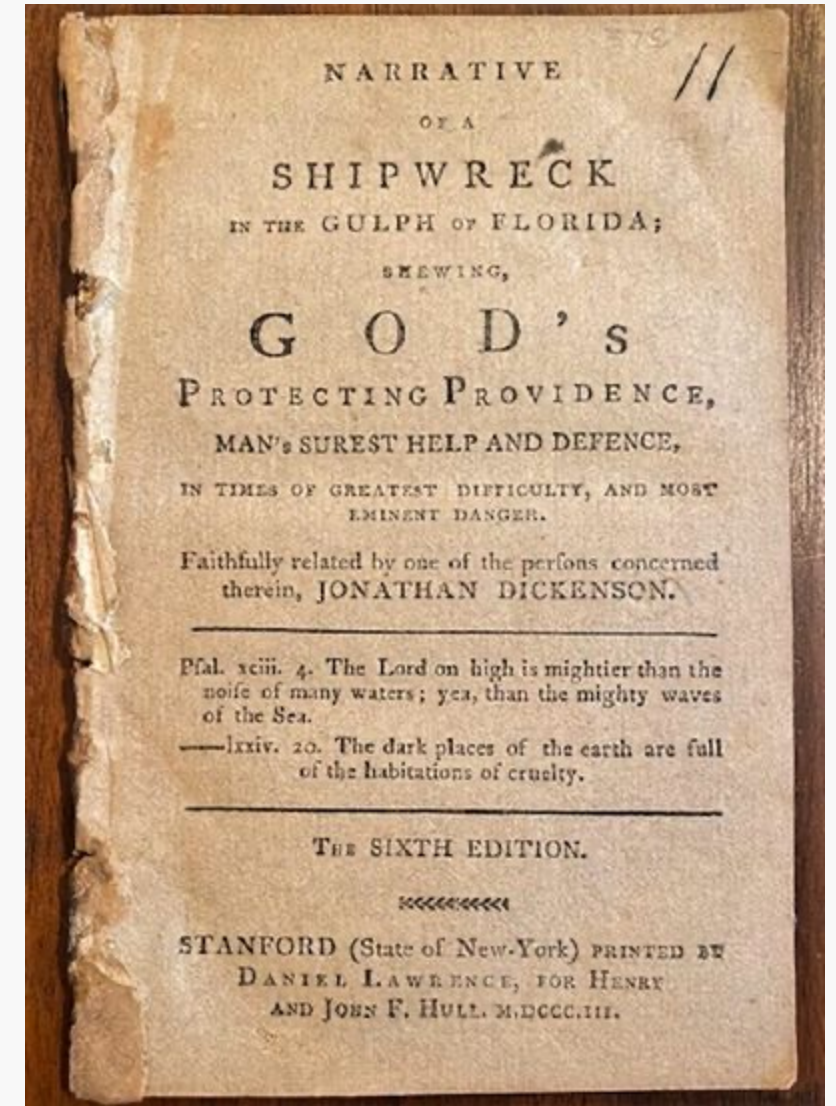


2020



“The Florida Indians Capture the Shipwrecked Company,” from Pieter van der Aa, *Naaukeurige Versameling der Gedenk-waardigste Zee en Landreysen na Oost en West-Indien* (1707). [Florida Memory](#) • [The Jupiter Inlet Hurricane of 1696](#)

- Indigenous people lived on the barrier islands
- They arrived in South Florida about 12,000 y ago
- Glades Indians (Jaega and others) extinct by 1770s
- Miccosukee and Seminole tribes permanently settled in southern Florida in the early 1800s
- **Indigenous fire** increased and maintained grassy and shrubby ecosystems that benefited wildlife and species diversity



Story of Jonathan Dickinson, 1696

## Historical Ecosystems of Palm Beach – Beach Dune



Phipps Ocean Park



Delray Beach

## Historical Ecosystems of Palm Beach – Coastal Strand



US Lifesaving Service House of Refuge  
Delray Beach 1876



Palmetto Park Road and A1A, Boca Raton  
c. 1925

To the Newcomer, the Barrier Islands  
Were Stark, Prickly Landscapes

# Reference Sites for Coastal Strand



Courtesy: Rob Barron



Canaveral National Seashore. Courtesy: Rob Barron



Kissimmee Prairie State Park



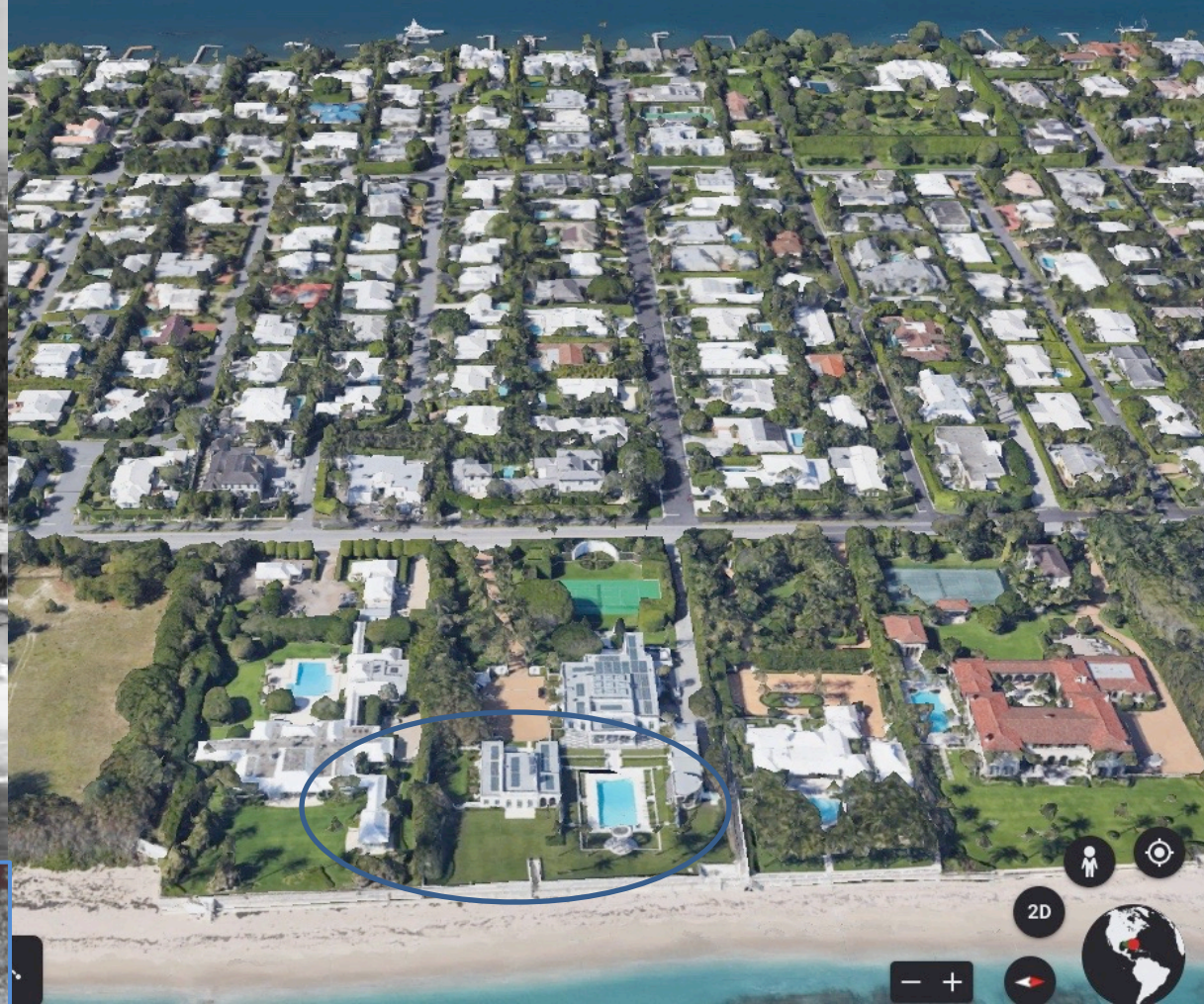
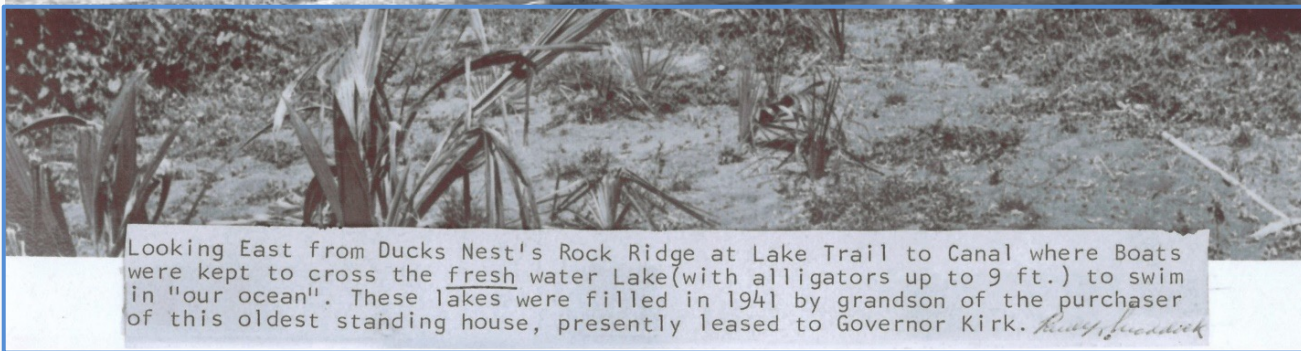
Palm Coast

# Historical Ecosystems of Palm Beach – Maritime Hammocks





# Historical Ecosystems of Palm Beach – Freshwater Wetlands



Villa Artemis, originally with freshwater lake to the west  
656 North County Road

Freshwater Lakes, Marshes, Interdunal Swales, and Swamps  
were present, but we know less about them



These wetlands were and are critical for wildlife

## Created Wetlands as References

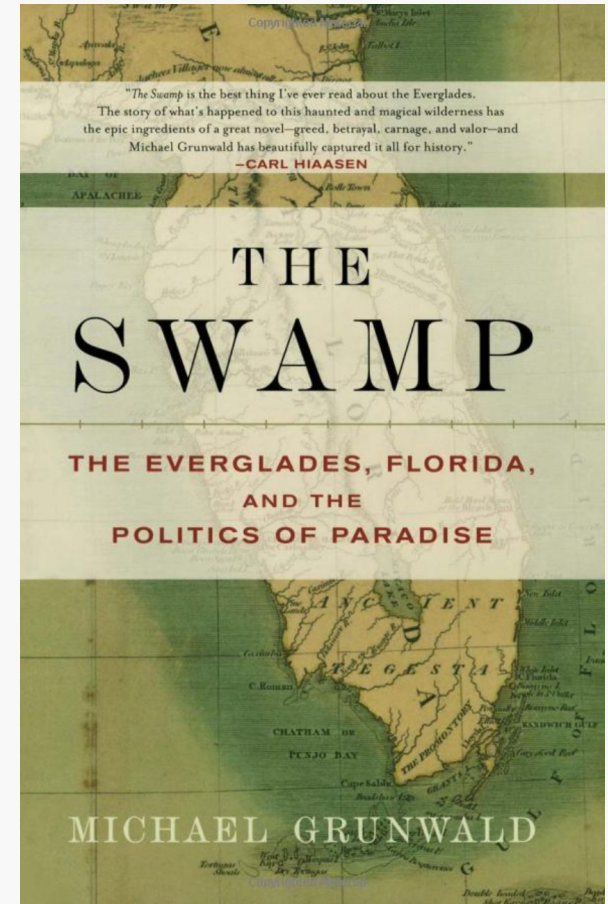
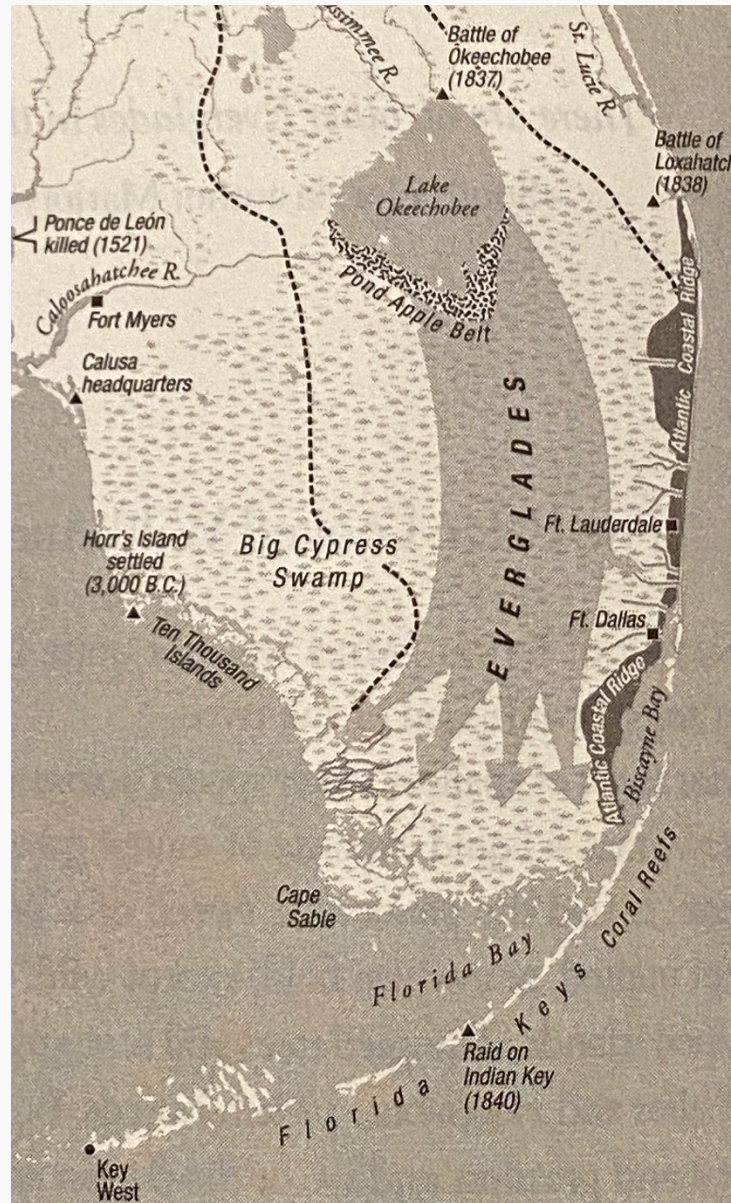
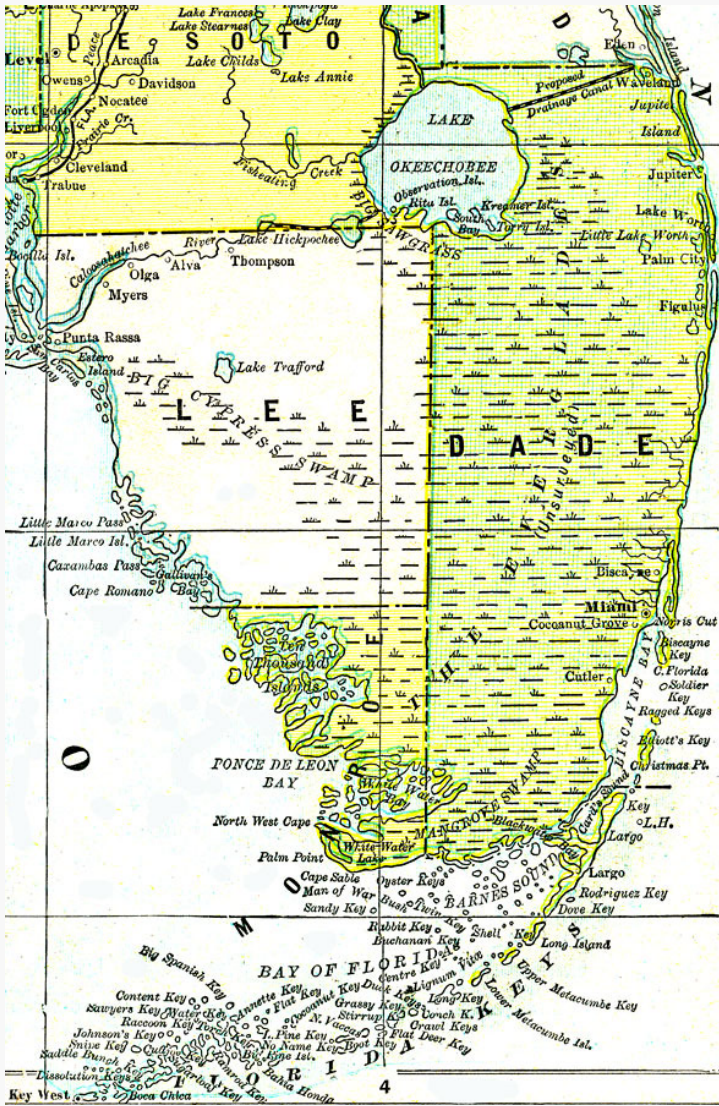


Pan's Garden, courtesy Susan Lerner



Retention area, Town of Ocean Ridge

## Modern Settlement of South Florida



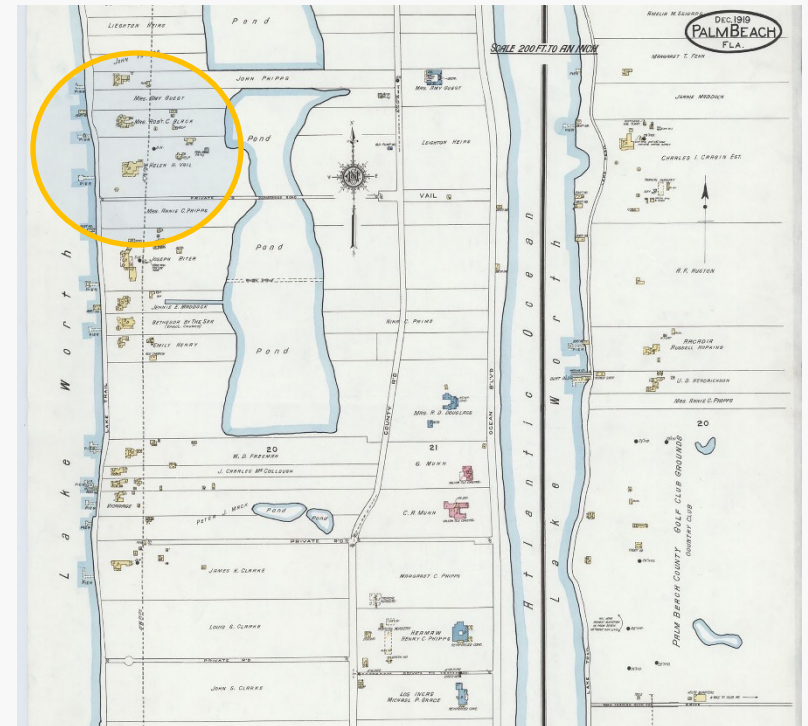
- Monroe County: established in 1823 at Key West
- Dade County: established in 1836 with its seat at Indian Key, which was destroyed in 1840.

“Soon settlers were launching farming communities all the way down the Atlantic Ridge, the so-called “Gold Coast.””

# Modern Settlement of Palm Beach



Note remnant trees on left.



Hogarcito, first Palm Beach home of Marjorie Merriweather Post & E.F. Hutton



Patches of Hammock Trees Frame House



Strangler Fig (*Ficus aurea*)



Grove of Trees on Edge of Golf Course

Naturalistic Gardens, Including Native Plants,  
Comprised Some of the Earliest Landscapes in Palm Beach



105 Banyan Road  
1923



720 South Ocean Blvd  
1919

By mid-20<sup>th</sup> century the transformation of the island was complete.







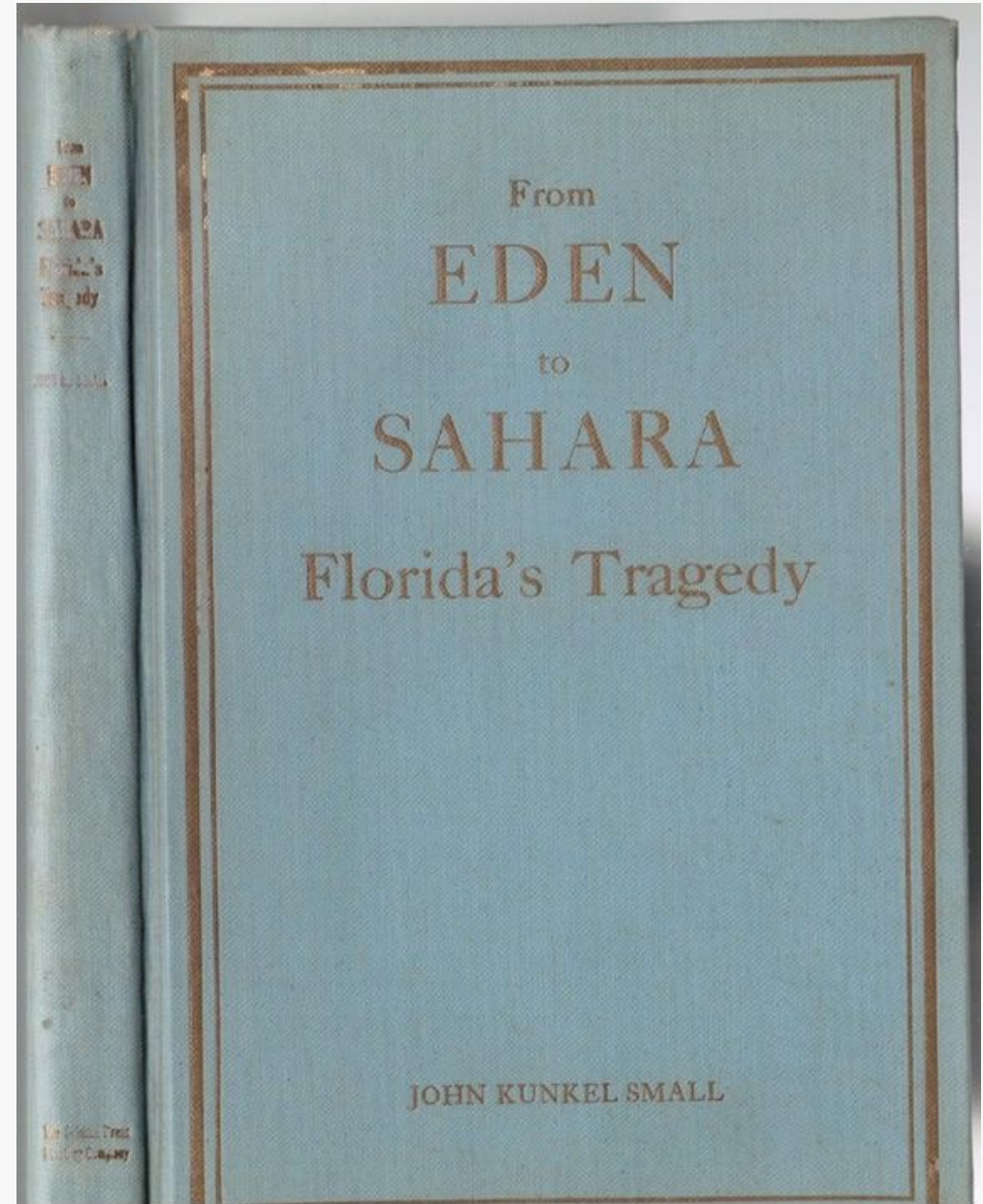
PLATE 14  
The same spot as shown in the accompanying plate. The last vestige of the plant life here was destroyed in changing this place from a reptilian to mammalian place of abode. On the sandy dunes adjacent to the mangroves now buried under a layer of marl and sand, formerly grew rare and showy plants, among which rose-purple flowers were a conspicuous feature; for example a candy-root each of whose flowers showed a central speck of gold and a four-o'clock relative with large infertile flowers and small inconspicuous flowers which burrowed and produced fruits under the ground.

Development of Miami Beach at Indian Creek

## John Kunkel Small, New York Botanical Garden

- Author of Flora of the Southeastern States and many more
- Supported by patronage of industrialist Charles Deering
- Wrote From Eden to Sahara based on expedition of 1922

“The **wholesale destruction** of the plant covering, through carelessness, thoughtlessness, and vandalism in the Peninsular State, prehistoric and historic, **was everywhere apparent.**”



Published 1929



## FLORIDA: A LANDSCAPE OF DREAMS

Atlantic Center for the Arts

**Closing Reception: Friday, February 4, 2022 5 PM – 7 PM**

*Florida: A Landscape of Dreams* takes audiences on a visual journey across our state while addressing issues such as land conservation, water quality, and wildlife diversity. Over the years, Florida has been marketed as a “Paradise”—and selling the dream to tourists and residents alike—has come at a steep price. However, with a renewed interest in discovering “Old Florida” and the trend of “heritage tourism” on the rise, the public is poised to pay attention to what has been in our backyard all along. Thanks to the tireless efforts of certain conservation photographers—Jennifer Adler, Eric Clay, Paul Marcellini, Tessa Skiles, Mac Stone and Carlton Ward Jr.—we have truly come to understand what’s at stake. Florida’s landscape—from cypress strands to sawgrass prairies, coastal lowlands and estuaries to freshwater springs—is an environmental gem, and the aptly named “Treasure Coast” is a gift we cannot afford to squander. Through stunning imagery and educational initiatives, these photographers continue to make a difference. By showcasing Florida’s unique landscape and examining the role it plays in supporting our state’s lifestyle and economy, these photographers remind us that our future does not exist on a parallel track. Rather, it is intertwined with that of Florida’s conservation efforts, and the steps we take today will determine the final outcome. The photographs in this exhibition allow viewers to appreciate the many facets of Florida’s biodiversity, and the critical need to preserve it.

[Learn More](#)

“Over the years, Florida has been marketed as a ‘Paradise’—and **selling the dream to tourists and residents alike—has come at a steep price.** However, with a renewed interest in discovering “Old Florida” and the trend of “heritage tourism” on the rise, the public is poised to pay attention to what has been in our backyard all along.”

# Environmental and Human Crises at Global and Local Scale



1,000,000 species threatened with extinction (IPBES, 2019).

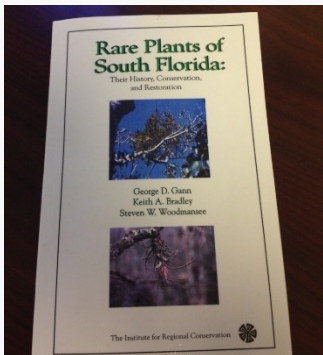


Climate change and sea level rise



*Schinus terebinthifolia*  
Photo by Shirley Denton

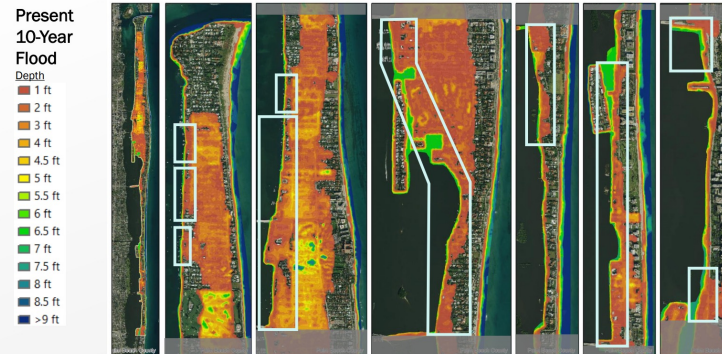
Diseases and Invasive Species



1 in 4 native plant species in South Florida gone or nearly gone (Gann et al. 2002 to present)

## Higher Probability Shoreline Flood Pathways

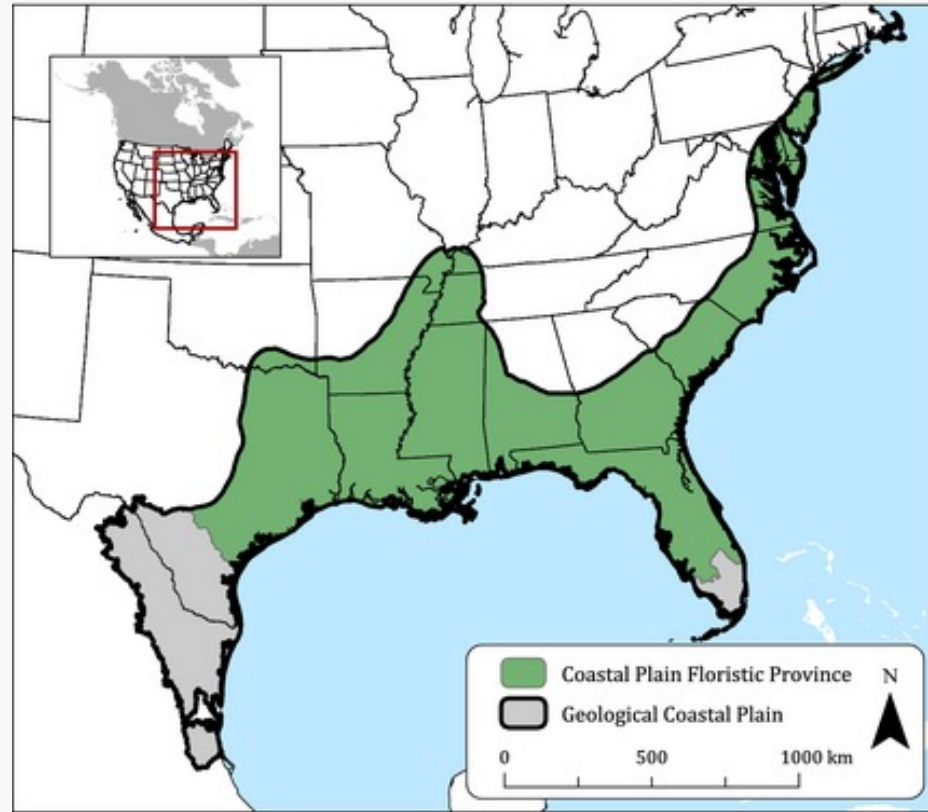
There are limited opportunities to implement small, independently-effective coastal flood control projects due to the long, low-lying shoreline and expansive, interconnected floodplain



Woods Hole Group 2021



Also, extreme storms, pesticides and other toxic substances, clean and abundant food, poverty and war.



North American Coastal Plain Global Biodiversity Hotspot  
Noss et al. 2014



# Local Biodiversity Matters For Conservation and Sense of Place



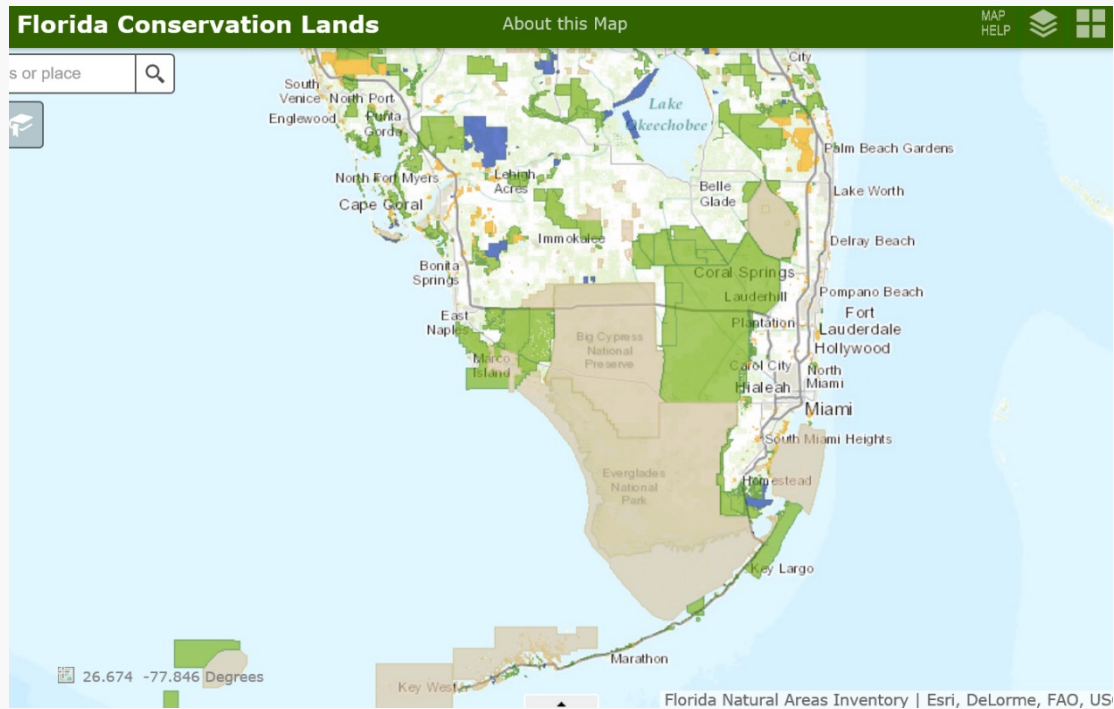
Species of Management Concern in Everglades National Park, hardwood hammocks.

## Native Plants Provide Beauty, Diversity, and Benefits



~ 250-300 native plant species were historically on the island  
Hugh Taylor Birch State Park has 278 recorded native species

>50% of region in conservation; United Nations Convention on Biological Diversity (CBD) 2020 Protected Areas Target = 17%. Everything should be great. But it's not, due to lack of protection of coastal and upland ecosystems.



NASA Johnson Space Center; August 14, 2013

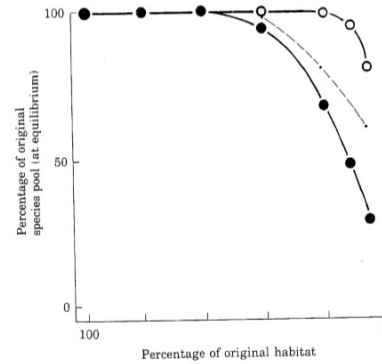


© Holly L. Salvato

## Fragmentation leads to inexorable loss

no species are lost from either pool. As fragmentation proceeds we eventually reach some critical level of reduction and fragmentation where species begin to die out. The susceptible pool loses species earlier and loses more species in total than does the resistant pool. When the resistant pool begins to lose species, it loses them very rapidly, because by this time the fragments are small and there is little habitat left.

Insularization causes extinctions over and above those expected through reduction in the total area of habitat. More species persist at equilibrium if the remaining habitat is concentrated into a single large patch rather than distributed over many small fragments (Figure 4). We stress that the results in Figure 4 are equilibrium patterns; depending on the relative time scales of habitat destruction and species'



**FIGURE 4.** The number of species remaining in each species pool as fragmentation proceeds. Closed circles show the pool of species with large area requirements and low vagility. Open circles show the species with less stringent area requirements. The small dots connected by the dashed line depict the proportion of the first pool that would be present when the habitat is minimally fragmented. (From McLellan et al., 1986.)

Wilcove 1986



© Kirsten Hines, www.KirstenNatureTravel.com

Some species and groups go faster, some slower



## Plant Biodiversity is Key to Animal Biodiversity



Ceraunus Blue

Image by Mary Trulio Fesmire



Cooper's Hawk

Image by Joe Mdo

## **Extinction Debt**

Refers to the time delay between the impact of environmental changes and the time species go extinct.

(from Tilman et al. 1994)

## **Dark Diversity**

Refers to the missing portion of a species pool for a given habitat in a given region.

(from Pärtel et al. 2011)

Are we in the  
extinction prevention business?

Or the biodiversity recovery  
business?

How do we actually *Save Species*?

And ourselves?

## Business As Usual Thinking

1. Sustainability is about **reducing impact**
2. Emphasis is on **gray infrastructure**, not green infrastructure

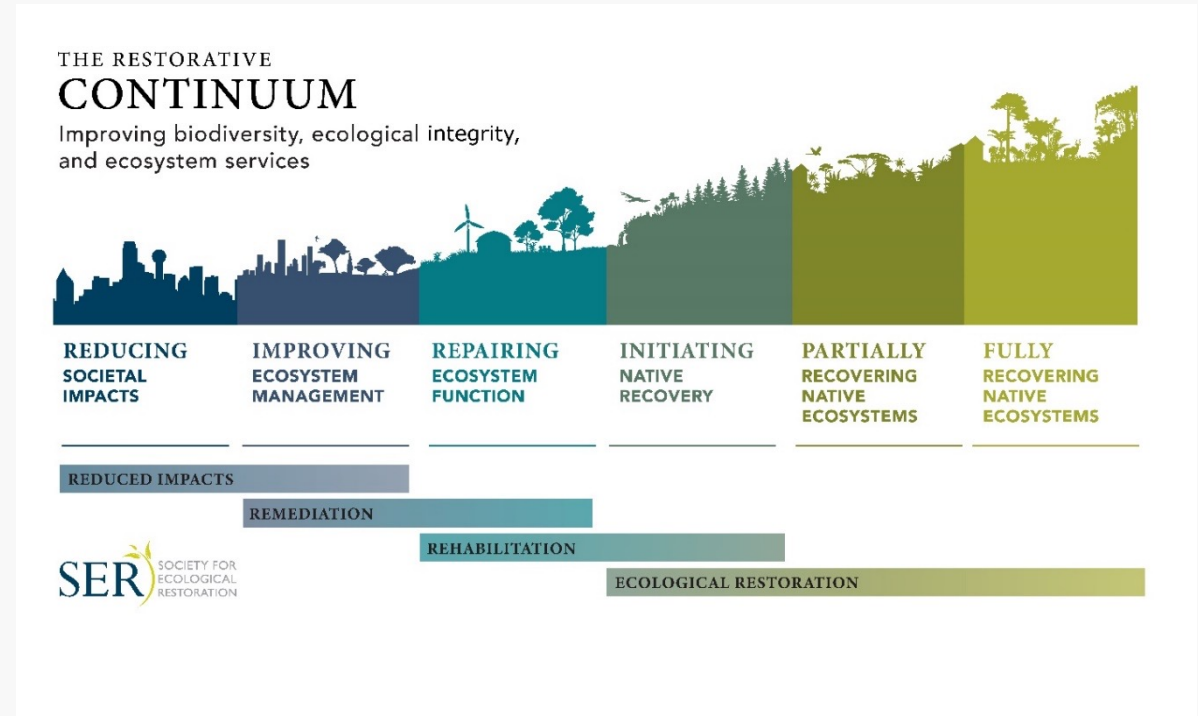
## Transformative Thinking

1. The **baseline is neutrality** (carbon, biodiversity, ecosystem services)
2. The **goal is restorative** (e.g., bending the curve, net gain, moving the needle, ecological uplift) with regard to biodiversity and ecosystem services and, where appropriate, carbon.

# What happens in Palm Beach matters



[www.ser.org/Standards](http://www.ser.org/Standards)



**All restorative activities matter**, no matter how small. But some activities may not be restorative at all (e.g., some mitigation, afforestation of native grasslands).



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DISCOVER OUR NEW CAMPAIGN!



# WE CAN DO THIS!

ONE PERSON AT A TIME

**REGENERATE BIODIVERSITY**

"In the past, we have asked one thing of our gardens:  
that they be pretty. Now they have to support life,  
sequester carbon, feed pollinators and manage  
water."

— DOUG TALLAMY



THE SOLUTION:

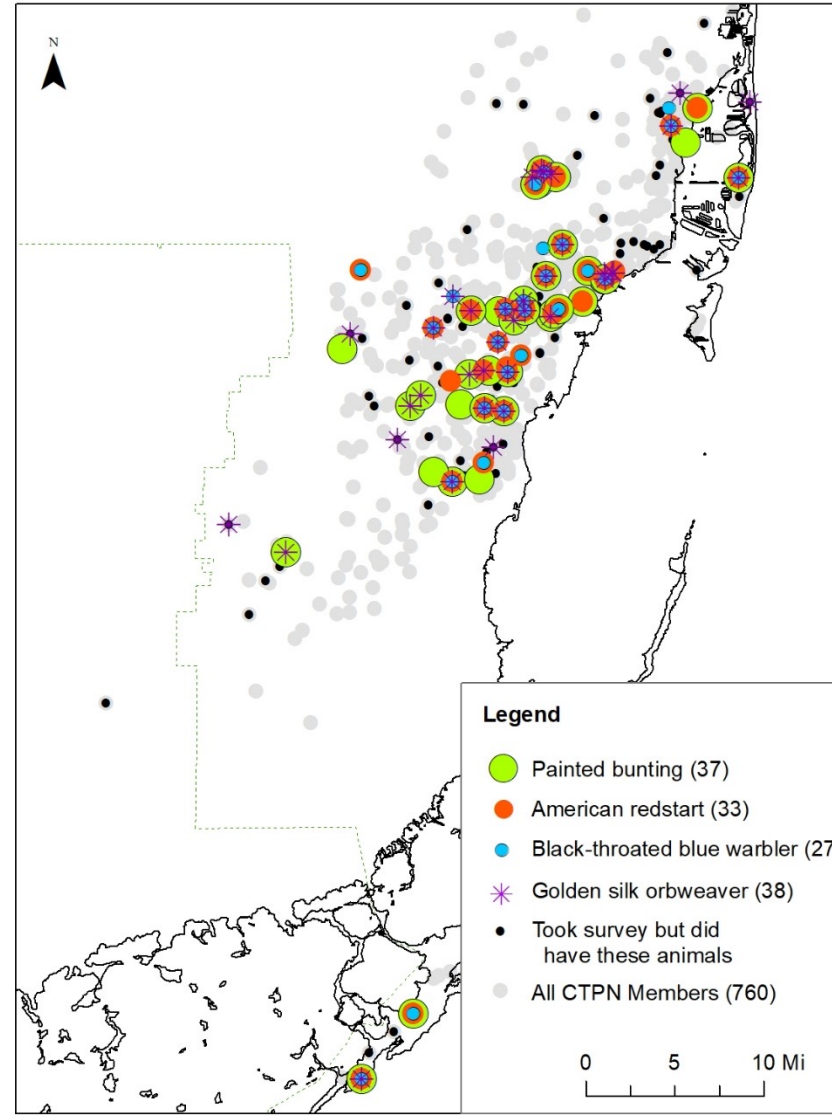
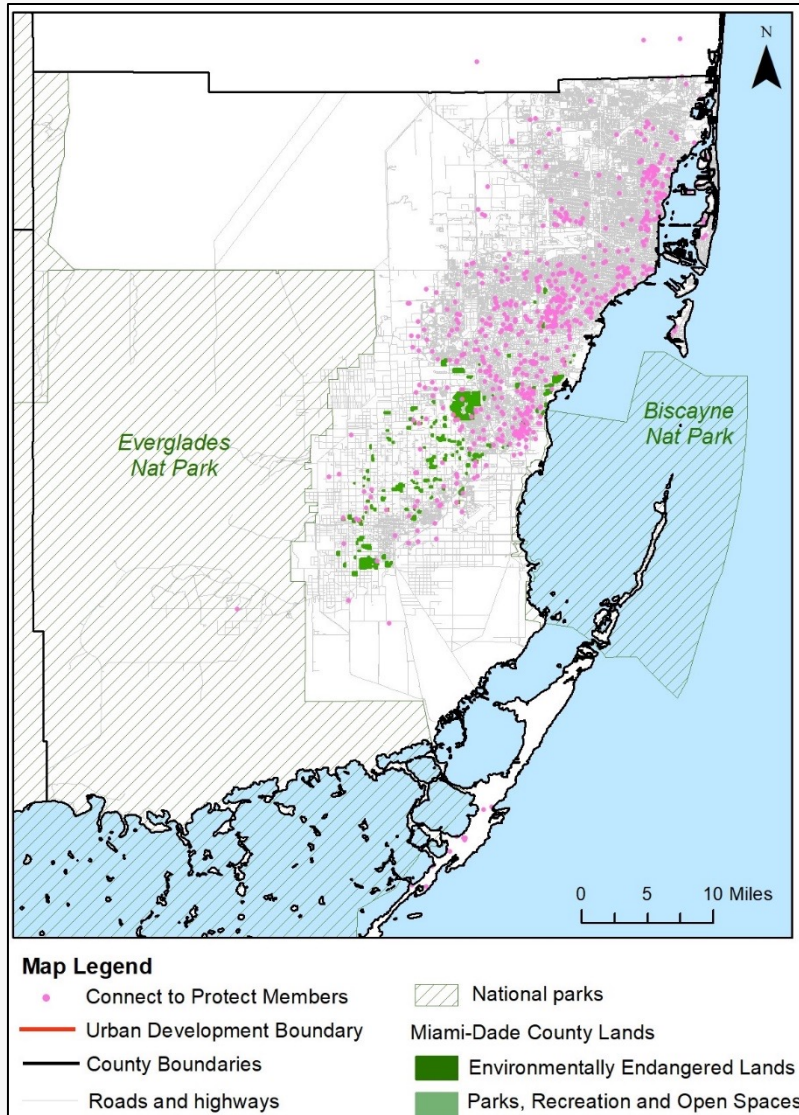
# PLANT NATIVE

# Impacts of Individual Landscapes

Every garden or landscape project can have beneficial outcomes regardless of size by:

- increasing numbers and population sizes of depleted native species
- increasing connectivity of native ecosystems
- improving ecosystem functions such as pollination and trophic interactions
- reducing populations of invasive species and other threats
- reducing use of toxic pesticides and fertilizers
- reducing emissions of or sequestering CO<sub>2</sub>e<sub>q</sub>

# Impacts at Landscape Scale



FTBG Connect to Protect Network

Expanding appreciation of coastal ecosystems and native plants inspires people to integrate environmental stewardship into everyday life.

Envision, Renew, and Conserve

- ▶ Showcase the distinctive beauty, diversity, and benefits of native plants
- ▶ Protect the coastline by returning historic ecosystems to the park and thus creating a model of sustainability
- ▶ Foster a habitat for coastal wildlife





# Protect and Restore Native Ecosystems



Beach Dune (pioneer zone)



Sea lavender, c. 1915



Coastal Strand (shrub zone)



Wildflower Meadow (interdunal swale)



Coastal Forest (maritime hammock)

## Build on Sustainable Landscapes Work at Pan's Garden and other Examples



# Restoring the Gold Coast

**Major Sponsors**




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**Collaborators**

















# Coastal Restoration Center at redesigned Phipps Ocean Park



*Piriqueta cistoides* subsp. *caroliniana*



*Trichostema dichotomum*



The Institute for Regional Conservation

## BIODIVERSITY STARTER KITS

As part of our Restoring the Gold Coast Program, IRC is offering native biodiversity starter kits for gardens on barrier islands in southern Palm Beach County.

Each kit comes with hand-selected native plants perfect for enhancing your native beach dune system or coastal garden. This service helps make the restoration of native habitats on barrier islands cost effective and time efficient.

### What Each Starter Kit Contains

A single kit contains five native plants in 4" to 3-gal. containers, including at least one rare species not readily available on the open market. A double contains 10 native plants. Prices start at \$60 for DIY kits.

### Kits Are Available For:

- Beach dunes and coastal grasslands
- Coastal strand and shrublands (back dune)
- Tropical hammock forests and coastal gardens
- Butterfly attracting kits for a wide variety of coastal habitats

### How You Can Get Your Kit

We will be offering a monthly pickup service of these kits. Delivery and planting can be arranged for an additional fee. If you're interested in purchasing an IRC Biodiversity Kit, please visit our website at: [regionalconservation.org/donationrgc.html](http://regionalconservation.org/donationrgc.html)

Natives For Your Neighborhood

Home NFN Home Clarification About NFN Map Online Resources

Zip Code 33480  
search for Native Plants, Habitats and Wildlife

This is a long narrow zip code area in the Town of Palm Beach in Palm Beach County. Link to map.

### Native Plants

Click below to obtain a list of native plants that are recommended for this zip code and to see photos and learn more about them.

Get your plants for \$480!

Advance search for plants!

### Habitats

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.

Click below to view a list of some native habitats for 33480.

Get your list of habitats for \$480!

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### Focal Gold Coast Species

**Beach ragweed**  
*Achillea millefolium*

- Florida Keys south to Brevard County, but rarely extant along Florida east coast.
- Introduced at Atlantic Dunes Park (2016) and Delray Municipal Beach (1995), still present.

**Beach Clavertine**  
*Juncus roemerianus*

- Federally endangered. Miami-Dade to Miami County residents.
- Reintroduced to Atlantic Dunes Park (2016) and introduced to Delray Municipal Beach (2002-2006), still present.

**Beach-tea**  
*Croton punctatus*

- Scattered and rare in southeastern Florida. Not common on re-assembled beaches.
- Present at Atlantic Dunes Park and Delray Municipal Beach. Plants added in 1995.

**Pineland Croton**  
*Croton leucomeris*

- Florida Keys to St. Lucie County. Nearly extant north of Miami-Dade County. Sole larval host for two federally endangered and endemic butterflies.
- Planted at Delray Municipal Beach (1995) but introduction failed.

**Bartram's Scrub-hairstreak**  
*Speyeria bartrami*

- Federally endangered. Monroe and Miami-Dade counties, extant in Broward and Palm Beach counties.
- Larvae feed only on Pineland croton.

**Florida prairie-clover**  
*Dalea carolinensis* var. *floridana*

- Federally endangered. Southern mainland south to Palm Beach and Collier counties. Extinct in Palm Beach County.
- Collected in the Palm Beach area only in 1895 and 1918.

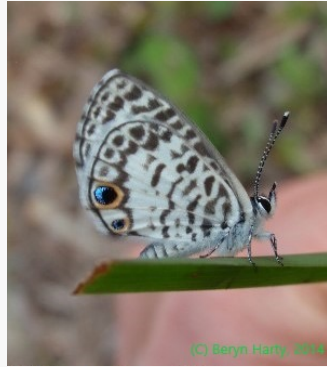
Facilitate Recovery of Biodiversity

Contribute to Science-based Restoration

Provide Education & Tools for Residents and Surrounding Areas

# Foster Habitats for Birds and Butterflies

## Four Larval Host Plants – 10 Coastal Butterflies



**Cassius Blue**



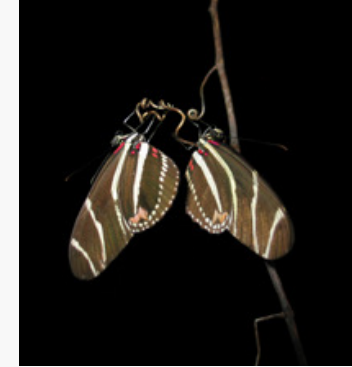
**Large Orange Sulphur**



**Martial Scrub-Hairstreak**



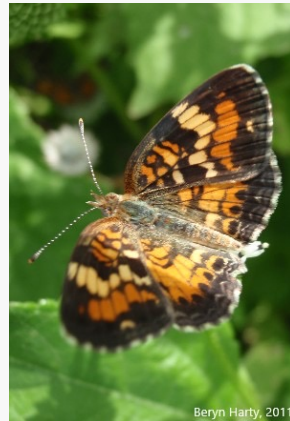
**Common Buckeye**



**Zebra Heliconian**



**Gray Hairstreak**



**Phaon Crescent**



**White Peacock**



**Gulf Fritillary**



**Julia Heliconian**

## Native Plants Provide Beauty, Diversity, and Benefits



~ 250-300 native plant species were historically on the island  
Hugh Taylor Birch State Park has 278 recorded native species

**Virginia live oak**  
*Quercus virginiana*  
**Fagaceae**



**Gumbo-limbo**  
*Bursera simaruba*  
**Burseraceae**



# TREES

Great trees, common in nature, readily available, provide abundant food for birds and other wildlife

# TREES

**Paradisetree**  
*Simarouba glauca*  
Simaroubaceae



**Black ironwood**  
*Krugiodendron ferreum*  
Rhamnaceae



Trees of great beauty, available, provide food for birds and other wildlife



**Strangler fig, Golden fig**

*Ficus aurea*

**Moraceae**

TREES



Large tree, fast grower, tropical appearance, major food source for birds and other wildlife

Larval host of Ruddy Daggerwing butterfly

Like all fig trees, their roots require a lot of space

# TREES or SHRUBS

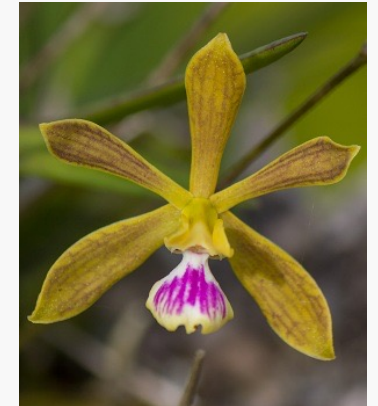
**Marlberry**  
*Ardisia escallonioides*  
Primulaceae



**Buttonwood**  
*Conocarpus erectus*  
Combretaceae



Blue-gray gnatcatcher



Butterfly orchid

Adaptable as trees or shrubs, available, provide food for birds and other wildlife  
Buttonwood trees are among the most important bird and epiphyte trees

**Jamaica caper-tree**  
*Quadrella cynophallophora*  
Capparaceae

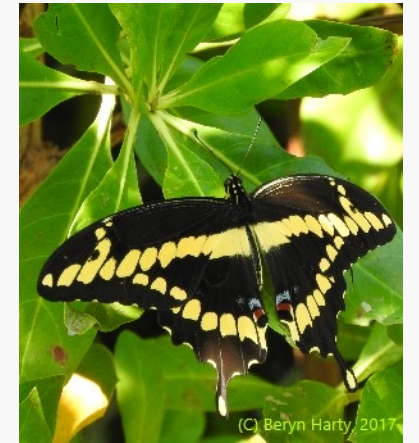


Small tree or dense shrub  
Provides food and cover for birds

**Wild-lime, Lime prickly-ash**  
*Zanthoxylum fagara*  
Rutaceae



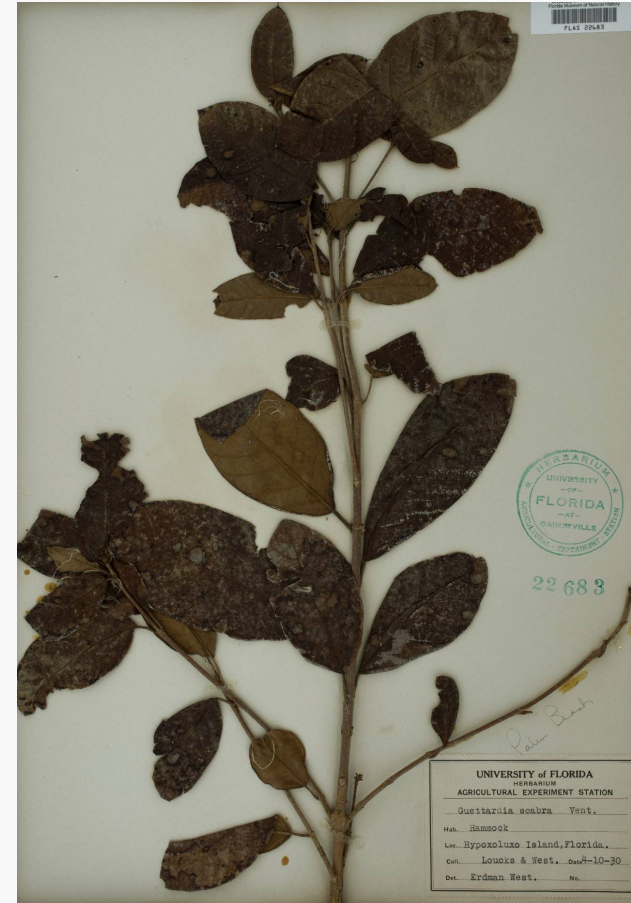
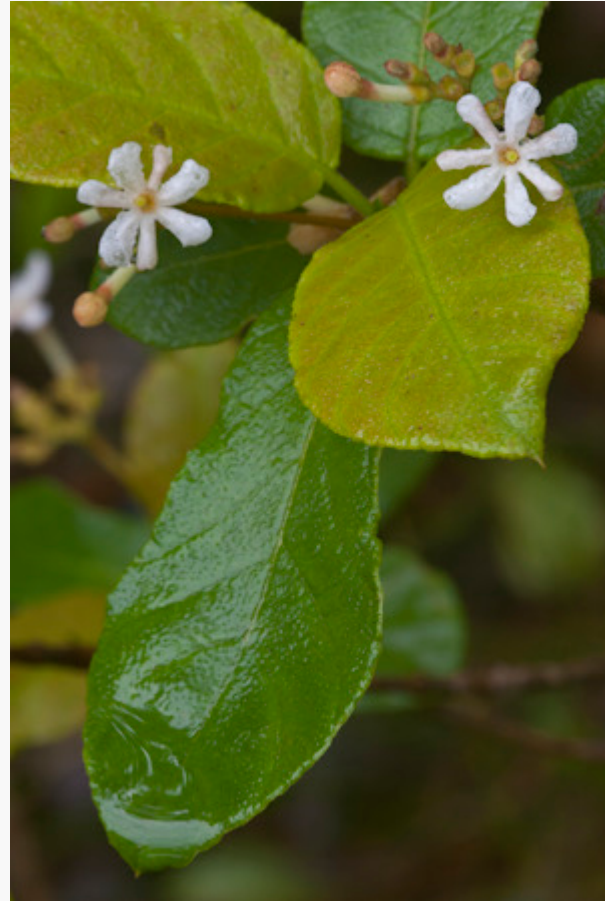
Spiny, sprawling tree or shrub, good for barriers  
Larval host for Giant swallowtail butterflies



**TREES or  
SHRUBS**

Rough velvetseed  
*Guettarda scabra*  
Rubiaceae

TREES or  
SHRUBS



*Perigonia lusca*. Spingidae. Macroglossinae  
| gailhampshire | Flickr

Rare shrub collected once in Palm Beach County in 1930  
Larval host for Sphinx moth

# SHRUBS

**Coco-plum**  
*Chrysobalanus icaco*  
Chrysobalanaceae



**Firebush**  
*Hamelia patens var. patens*  
Rubiaceae



Great shrubs, common in nature, readily available, provide abundant food for birds and other wildlife

# SHRUBS

**Wild-sage, Buttonsage**  
*Lantana involucrata*  
Verbenaceae



Highly versatile shrub, available  
One of the most important butterfly and  
bird plants; visited by hummingbirds

**Florida Keys blackbead**  
*Pithecellobium keyense*  
Fabaceae



Sprawling shrub, great for birds, butterflies  
Larval host for Cassius blue, Miami blue, and  
Large orange sulphur butterflies



# VINES

Wild-allamanda,  
Hammock viperstail  
*Pentalinon luteum*  
Apocynaceae

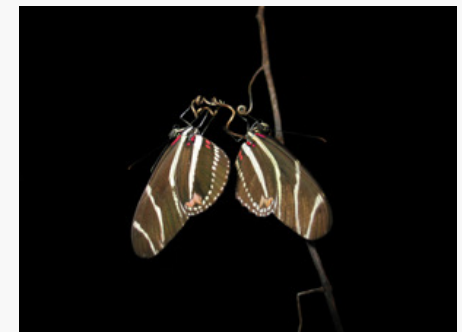


Highly salt tolerant, versatile vine  
Larval host of polka-dot wasp moth

Corkstem passionflower  
*Passiflora suberosa*  
Passifloraceae



Inconspicuous vine  
Larval host for gulf fritillary, Julia, and  
Zebra longwing butterflies



GROUND  
COVERS

Muhlygrass, Hairawn muhly  
*Muhlenbergia capillaris*  
Poaceae



Adaptable, beautiful grass, available

Beach-creeper, Golden-creeper  
*Ernodea littoralis*  
Rubiaceae



Hardy, woody groundcover, available



# GROUND COVERS

**Beach clustervine**  
*Jacquemontia reclinata*  
Convolvulaceae



Federally endangered endemic wildflower  
Provides food for birds

**Woodsgrass, Basketgrass**  
*Oplismenus hirtellus* subsp. *setarius*  
Poaceae

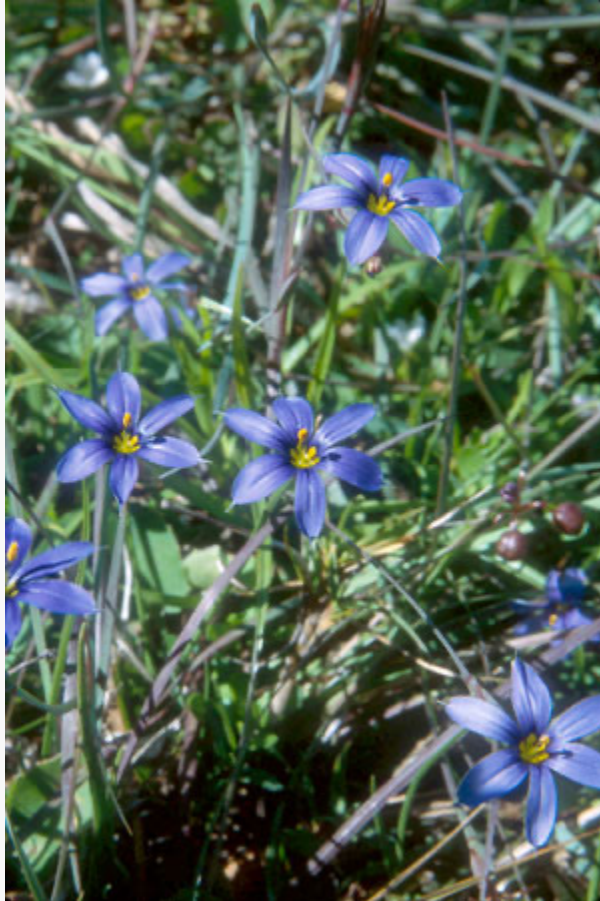


Excellent groundcover in partial shade  
Larval host for Carolina satyr butterflies



# GROUND COVERS

**Narrowleaf blue-eyed-grass**  
*Sisyrinchium angustifolium*  
Iridaceae

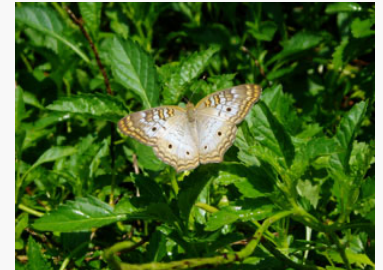


Small, graceful wildflower  
Attracts pollinators

**Turkey tangle fogfruit, Capeweed**  
*Phyla nodiflora*  
Verbenaceae



Excellent groundcover, major butterfly plant  
Larval host for Common buckeye, Phaon  
crescent and White peacock butterflies



# Sources of Native Plant Data

**Florida Native Plant Society**

Who We Are | What We Do | Native Plants | Resources | Events | Chapters

Join / Support

Home > Native Plants

## Native Plants

**Learn about native plants!**  
Click on the links to learn more.

- Natives for Your Area
- Natives for landscaping and restoration: **Plants**
- Attracting butterflies and native pollinators: **Butterflies and Pollinators**
- Attracting Wildlife: **Wildlife**
- Native Plant Communities
- Gardens with Natives

**Florida Association of Native Nurseries (FANN)**

Join Now | Sign In

Growing, planting and promoting Florida native plants for sustainable landscapes.

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Annual Wholesale Trade Show: [NativePlantShow.com](http://NativePlantShow.com)

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Starting a design? Consider what grows naturally, then find the plants.

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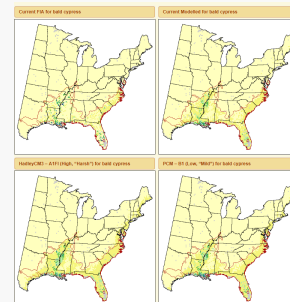
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Bring more birds to your home with native plants



**Atlas of Florida Plants**  
Institute for Systematic Botany

Home | Browse By | Search | Specimen Search | ISB | Links | About | References

**Liquidambar styraciflua** | Jump to a section: [Classification](#) | [Citation](#) | [Source](#) | [Synonyms](#) | [Print](#)

Family:	ALTINGIACEAE
Species:	<i>Liquidambar styraciflua</i> L.
Common Name:	SWEETGUM
Status:	Native, <b>FACW (DEP)</b> , <b>FAC (NHP)</b> , <b>I (WAP)</b>
Specimen:	<a href="#">View details of USF Herbarium specimens</a>

\*\* Not applicable or data not available.

**Classification**

Order: **SAXIFRAGALES**  
Family: **ALTINGIACEAE**  
Genus: ***Liquidambar***  
Species: ***Liquidambar styraciflua* L. - SWEETGUM**

**Citation**

Citation: LIQUIDAMBAR STYRACIFLUA Linnaeus, Sp. Pl. 999. 1753.  
Basionym: \*\*  
Type: VIRGINIA: Without data, Kalm s.n. (lectotype: LINN 1134.1). Lectotyped by Witnands, Bot. Commelins

**Species Distribution Map**

Map | Photo Gallery | Browse Photos

Distribution Map: Based on **vouchered** plant specimens from **wild** populations. **Cultivated** occurrences are not mapped. View county names by placing the cursor over the map.

Species Distribution Map  
 Not Vouchered  
 Vouchered



Floristic Inventory of South Florida

Floristic Inventory of the Florida Keys

Natives for Your Neighborhood

Plantas del Mayab (Yucatan)

Plantas de Puerto Rico / Plants of Puerto Rico

Restoring the link between people and nature

[Learn More](#)

IRC's Book



Ecological Restoration Standards



Pine Rockland Initiative



## How Does It Work?

**County Lists** – Ecological generalists with broad ranges



**ZIP Code Lists** – Ecological generalists + generalists within local habitats



**Habitat Lists** – Generalists + habitat specialists within native range within ZIP Code





NFYN can be used virtually anywhere – at residences and office complexes, in parks, and even in medians. And by increasing, restoring, and connecting existing protected areas.



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 [a list](#) of local nurseries that sell native plants.

### Water Conservation: Rain Barrels and Native Plants

A joint workshop between the  
City of Hollywood and the  
City of Hallandale

#### Native Plants for Rain Gardens

Plants that resist conventional insecticides and herbicides

- [Adiantum](#)
- [Asplenium](#)
- [Cyperus](#)
- [Eleocharis](#)
- [Ficus](#)
- [Guzmania](#)
- [Hedyotis](#)
- [Liatris](#)
- [Muhlenbergia](#)
- [Panicum](#)
- [Sporobolus](#)
- [Stachytarax](#)
- [Tillandsia](#)
- [Yucca](#)

Plants that can be used in partially shaded areas

- [Asplenium](#)
- [Cyperus](#)
- [Eleocharis](#)
- [Ficus](#)
- [Guzmania](#)
- [Hedyotis](#)
- [Liatris](#)
- [Muhlenbergia](#)
- [Panicum](#)
- [Sporobolus](#)
- [Stachytarax](#)
- [Tillandsia](#)
- [Yucca](#)

Plants that can be used in full sun

- [Asplenium](#)
- [Cyperus](#)
- [Eleocharis](#)
- [Ficus](#)
- [Guzmania](#)
- [Hedyotis](#)
- [Liatris](#)
- [Muhlenbergia](#)
- [Panicum](#)
- [Sporobolus](#)
- [Stachytarax](#)
- [Tillandsia](#)
- [Yucca](#)

For more information about these and other native plants, please contact The Institute for Regional Conservation at [irconservation@cityofhollywood.com](mailto:irconservation@cityofhollywood.com) or call 954-389-1111.

#### 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



Rooftop Gardens





Fiddlewood (*Citharexylum spinosum*), Simpson's stopper (*Myrcianthes fragrans*)



Coco-plum (*Chrysobalanus icaco*)

## Switching Out Hedges



Facilitating Recovery: Restoring Key Species



Restoring Native Ecosystem Landscapes at Scale

### Zip Code 33480 search for Native Plants, Habitats and Wildlife

This is a long narrow zip code area in the Town of Palm Beach in Palm Beach County. Link to [map](#).

#### Native Plants

• Click below to obtain a list of native plants that are recommended for 33480, 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 33480 !

Advance search for plants

#### Habitats

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

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.

• Click below to view a list of some native habitats for 33480.

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 33480 !

#### 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 33480 !

Find Native Plants!

#### Acknowledgements and past sponsors

Become a sponsor!

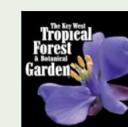
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
Canopy Sponsors:



- Widely cultivated
- ▲ Cultivated at native plant nurseries

Common Name	Scientific Name
-------------	-----------------

Trees

	<b><u>Black ironwood</u></b> ■	<b><u>Krugiodendron ferreum</u></b>
	<b><u>Black mangrove</u></b> ▲	<b><u>Avicennia germinans</u></b>
	<b><u>Blolly, Beefree</u></b> ■	<b><u>Guapira discolor</u></b>
	<b><u>Buttonwood</u></b> ■	<b><u>Conocarpus erectus</u></b>
	<b><u>Cabbage palm</u></b> ■	<b><u>Sabal palmetto</u></b>
	<b><u>Coastal Plain willow</u></b> ▲	<b><u>Salix caroliniana</u></b>
	<b><u>Common torchwood, Sea torchwood</u></b> ▲	<b><u>Amyris elemifera</u></b>
	<b><u>Crabwood, Oysterwood</u></b> ▲	<b><u>Gymnanthes lucida</u></b>
	<b><u>Dahoon holly, Dahoon</u></b> ■	<b><u>Ilex cassine</u></b>
	<b><u>Everglades velvetseed, Hammock velvetseed</u></b>	<b><u>Guettarda elliptica</u></b>
	<b><u>Florida fiddlewood</u></b> ▲	<b><u>Citharexylum spinosum</u></b>
	<b><u>Guiana-plum</u></b> ▲	<b><u>Drypetes lateriflora</u></b>
	<b><u>Gumbo-limbo</u></b> ■	<b><u>Bursera simaruba</u></b>

Buttonwood  
**Conocarpus erectus**  
Combretaceae

**General Landscape Uses:** A versatile tree or trimmed shrub in formal and informal landscapes, especially near the coast. It can be used as an accent or a specimen tree in residential and commercial landscapes, as a trimmed or informal hedge, and in buffer plantings. Learn more about gardening with buttonwood for birds and other wildlife in [Attracting Birds to South Florida Gardens](#).

**Ecological Restoration Notes:** A key element of coastal forests along the upland margin of mangrove swamps.

**Availability:** Widely cultivated. Available in Lake Worth at [Amelia's SmartyPlants](#) (561-540-6296).

**Description:** Medium tree or large shrub with an open crown. Branches mostly erect or ascending. Trunks leaning, 6-18 inches or more in diameter, often branching near the ground. Leaves 2-4 inches long, leathery, green or covered with silvery hairs.

**Dimensions:** Typically 20-40 feet in height; to 51 feet in South Florida. The silver form is often smaller. Can be as broad as tall or broader.

**Growth Rate:** Moderate.

**Range:** Monroe County Keys north mostly along the coast to Brevard and Levy counties; Bermuda, West Indies, Mexico, Central America, South America, Galapagos and western Africa. For a digitized image of Elbert Little's Florida range map, visit the [Exploring Florida](#) website.

 [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:** Coastal hammocks and margins of mangrove swamps; understory shrub in pine rocklands on Long Pine Key in Everglades National Park.

**Soils:** Periodically inundated to moist, well-drained to moderately well-drained freshwater or brackish soils, with or without humusy top layer.

**Nutritional Requirements:** Moderate to low; it prefers soils with organic content, but will still grow reasonably well in nutrient poor soils.

**Salt Water Tolerance:** Moderate; tolerates brackish water or occasional inundation by salt water.

**Salt Wind Tolerance:** High; can tolerate moderate amounts of salt wind without injury.

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

**Light Requirements:** Full sun.

**Flower Color:** Whitish.

**Flower Characteristics:** Inconspicuous. Essentially dioecious, with male and female flowers on separate plants; some male flowers contain a single ovule.

**Flowering Season:** All year; peak in summer.

**Fruit:** Scaly cone-like heads turning purple-brown, shattering when ripe.

**Wildlife and Ecology:** This is one of the most important host trees for epiphytes in South Florida, and provides significant food and cover for birds and other wildlife. The flowers, leaves and rough bark attract many insects and spiders, which, in turn, provide food for insect-eating birds. Occasional larval host plant for martial hairstreak (*Strymon martialis*) butterflies and tentalus sphinx (*Aelopus tentalus*) moths. Nectar plant for amethyst hairstreak (*Chlorostymon maesites*) and other butterflies. The seeds are primarily dispersed by water.

**Horticultural Notes:** Can be grown from seed and cuttings. The silver form is not true to seed.

**References:** Nelson 2003, Schaefer & Tanner 1997

**Comments:** The wood can be used to make a high-grade **charcoal**, which supported an extensive industry in southern Florida in the early 1900s. A form with silver leaves (silver buttonwood) is often referred to as var. *sericea*, but it is not a true taxonomic variety. Silver buttonwood is found in hypersaline situations in the Florida Keys and occasionally along the southwest Florida coast. It is widely planted in landscapes, but is not native to most areas where it is planted.



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wildlife interactions



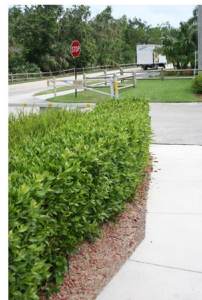
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In habitat, Everglades National Park, Florida



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In habitat, John Pennekamp Coral Reef State Park,  
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**Expand**



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**Piriqueta, Pitted stripeeed**  
***Piriqueta cistoides* subsp. *caroliniana***  
**Passifloraceae**

**General Landscape Uses:** Primarily recommended for natural landscapes and habitat restorations. Also wildflower gardens.

**Availability:** Grown by enthusiasts and occasionally by native plant nurseries.

**Description:** Small herbaceous wildflower.

**Dimensions:** About 4-8 inches in height. Usually taller than broad, but sometimes falling over and forming small patches.

**Growth Rate:** Fast.

**Range:** Southern United States south to the Monroe County Keys; West Indies. In the Monroe County Keys, apparently disjunct from Miami-Dade County to the pine rocklands of Big Pine Key; also collected once on Key Largo, but perhaps introduced there.



[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, prairies and marshes.

**Soils:** Moist to seasonally wet, well- to moderately well-drained sandy or limestone soils, without humus.

**Nutritional Requirements:** Low; it grows in nutrient poor soils.

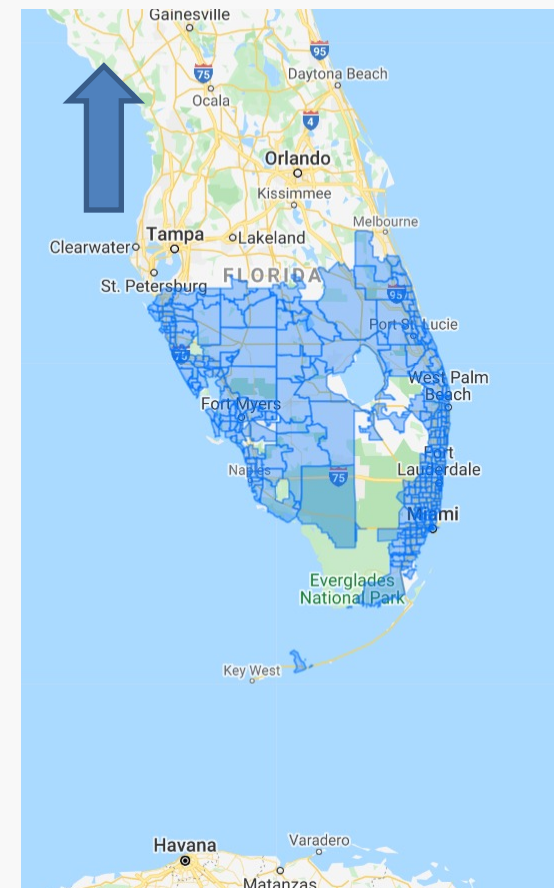
**Salt Water Tolerance:** Low; does not tolerate long-term flooding by salt or brackish water.



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In habitat, Everglades National Park, Florida

[Expand](#)



## Habitats

Habitats in Zip Code 33480

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.

### 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

### Maritime Hammock

Learn More

Plant List

### Tidal Marsh

Learn More

Plant List

### Tidal Swamp

Learn More

Plant List



Common Name

Scientific Name

Butterflies



Barred Yellow

Eurema daira



Black Swallowtail

Papilio polyxenes



Brazilian Skipper, Canna skipper

Calpodès ethlius



Carolina Satyr

Hermeuptychia sosybius



Cassius Blue

Leptotes cassius theonus



Ceraunus Blue

Hemiargus ceraunus antibubastis



Clouded Skipper

Lerema accius



Cloudless Sulphur

Phoebis sennae



Common Buckeye

Junonia coenia



Dainty Sulphur

Nathalis iole



Dorantes Longtail

Urbanus dorantes



Eastern Pygmy-Blue

Brephidium pseudofea

## 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.

### 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.

 [Map of native range by ZIP code north to Indian River and Manatee counties.](#)

### 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 corkstem passionflower (*Passiflora suberosa*), maypop (*Passiflora incarnata*) and whiteflower passionflower (*Passiflora multiflora* var. *multiflora*) and the naturalized passion fruit (*Passiflora edulis*). Native nectar plants include trees such as poisonwood (*Metopium toxiferum*), seagrape (*Coccoloba uvifera*) and smooth strongback (*Bouyeria succulenta*); shrubs such as baycedar (*Suriana maritima*), snowberry (*Chiococca* spp.), shiny-leaved wild coffee (*Psychotria 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 jack-in-the-bush (*Chromolaena odorata*), sleepy morning (*Waltheria indica*) and Spanish-needles (*Bidens alba* var. *radiata*). Adults also will feed on the invasive shrubs latherleaf (*Colubrina asiatica*) and shrubverbena (*Lantana 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](#).

plant interactions



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### Wildlife-Plant Interactions

Plant Associates of  
Gulf Fritillary

Sort By:

[Scientific Name](#)

[Common Name](#)

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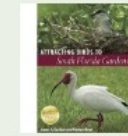
Common Name	Scientific Name	Plant Uses
<a href="#">Blue porterweed, Joee</a>	<a href="#">Stachytarpheta jamaicensis</a>	Nectar source.
<a href="#">Christmasberry, Carolina desertthorn</a>	<a href="#">Lycium carolinianum</a>	Nectar source.
<a href="#">Common wireweed, Common fanpetals</a>	<a href="#">Sida acuta</a>	Nectar source.
<a href="#">Corkystem passionflower</a>	<a href="#">Passiflora suberosa</a>	Larval host.
<a href="#">Jack-in-the-bush</a>	<a href="#">Chromolaena odorata</a>	Nectar source.
<a href="#">Maypop, Purple passionflower</a>	<a href="#">Passiflora incarnata</a>	Larval host.
<a href="#">Paper flower</a>	<a href="#">Bougainvillea glabra</a>	Nectar source.
<a href="#">Passion fruit, Purple granadilla</a>	<a href="#">Passiflora edulis</a>	Larval host.
<a href="#">Piriqueta, Pitted stripeseed</a>	<a href="#">Piriqueta cistoides subsp. caroliniana</a>	Larval host.
<a href="#">Scorpiontail</a>	<a href="#">Heliotropium angiospermum</a>	Nectar source.
<a href="#">Silver sea-oxeye-daisy, Bushy seaside oxeye</a>	<a href="#">Borrichia frutescens</a>	Nectar source.
<a href="#">Snow squarestem</a>	<a href="#">Melanthera nivea</a>	Nectar source.

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### Zip Code 33444

search for Native Plants, Habitats and Wildlife

This is a long narrow zip code area east of I 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 !](#)

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# NFYN Encourages (but we are all gardeners!)

**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](tel:239-939-9663)) and in Lake Worth at **Indian Trails Native Nursery** ([561-641-9488](tel: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.

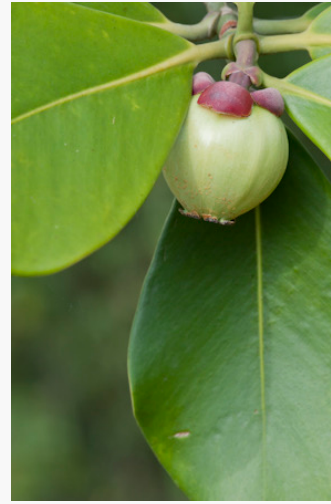
**Drought Tolerance:** High; does not require any supplemental water once established.



*Copyright by: George D. Gann*

*in habitat, Everglades National Park, Key Largo,  
Florida, 2013*

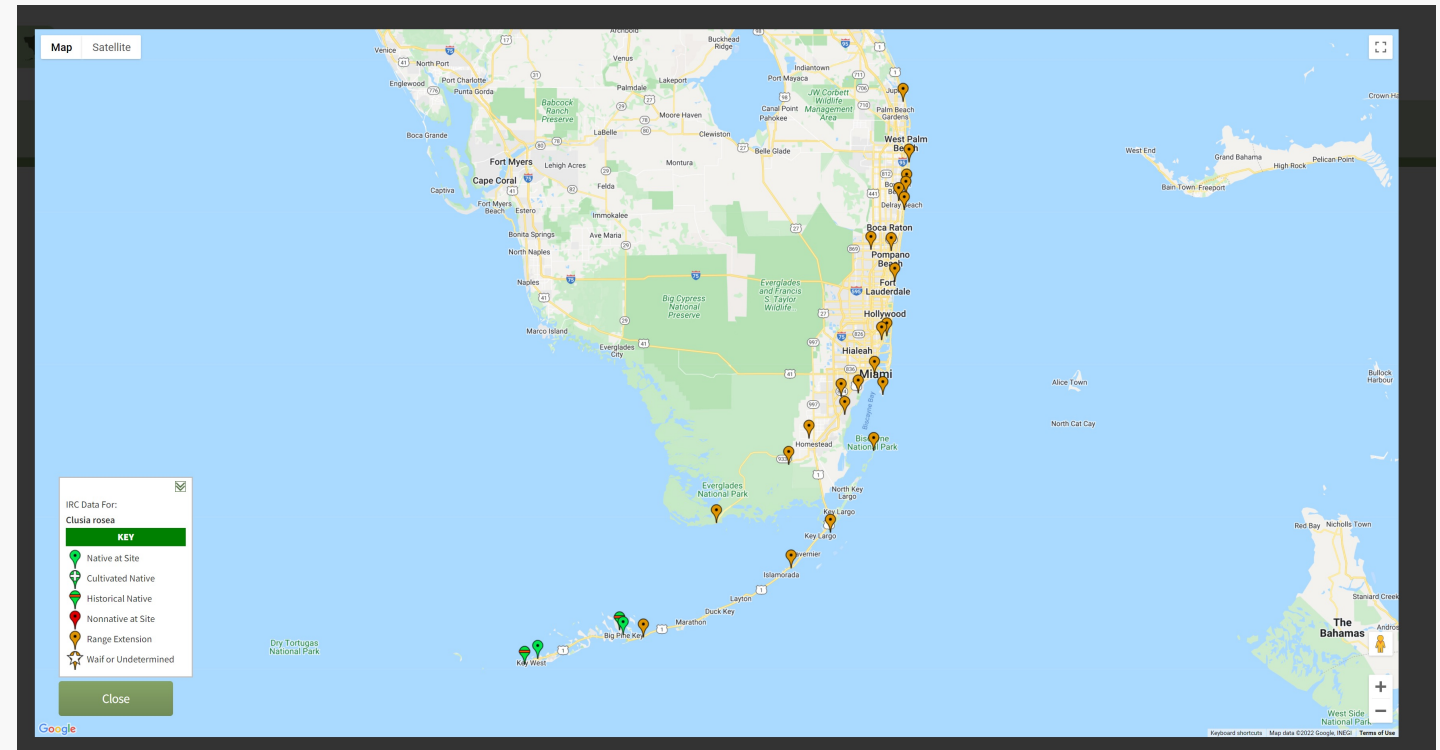
Florida natives planted outside of their native ranges can be benign, or they can misbehave.



*Clusia rosea* Pitch-apple



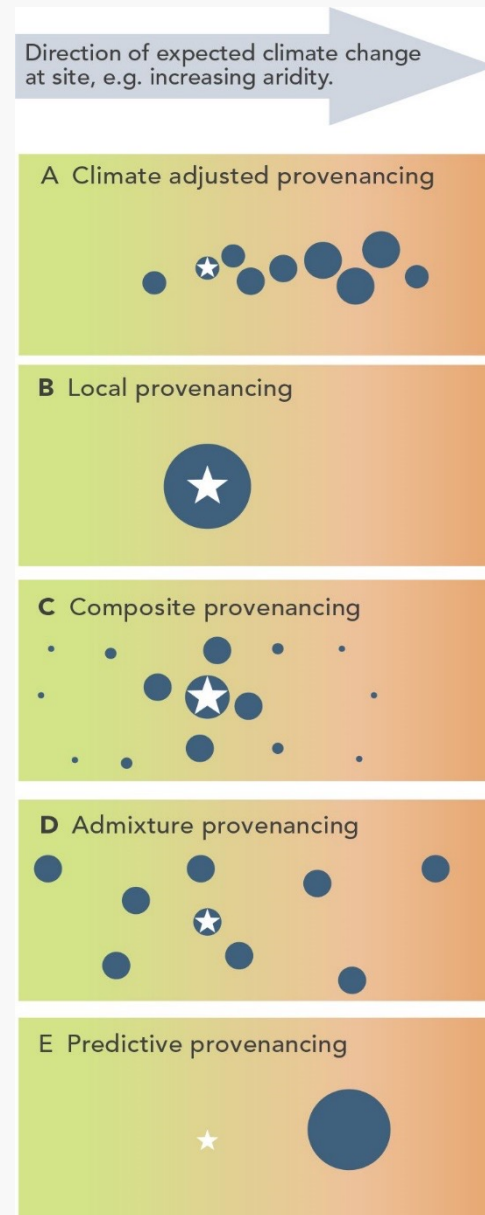
*Guaiacum sanctum*  
Lignumvitae, Hollywood  
lignumvitae



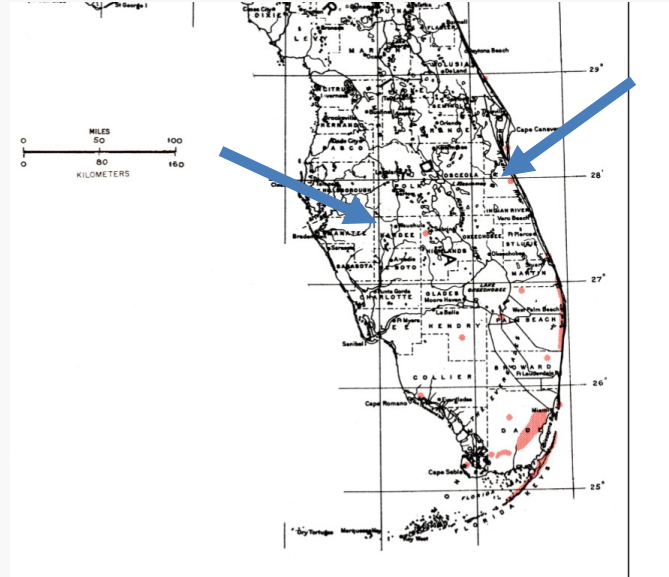
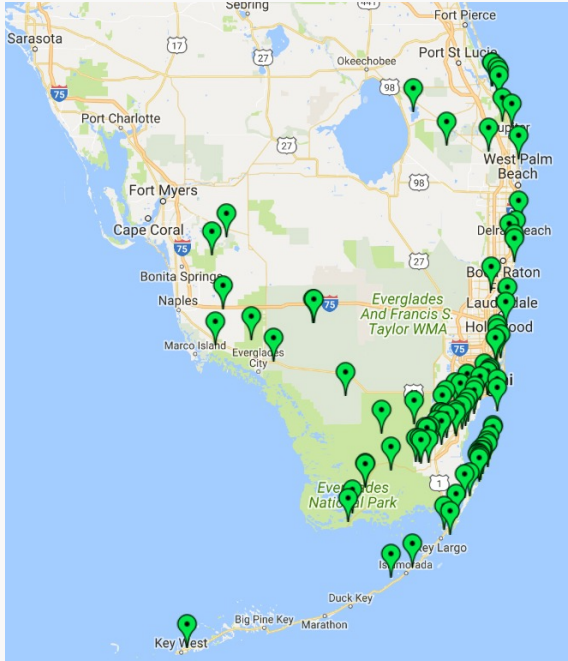
**Provenancing strategies for plants** (reprinted from Prober et al. 2015).

Also applies to animals and soil biota.

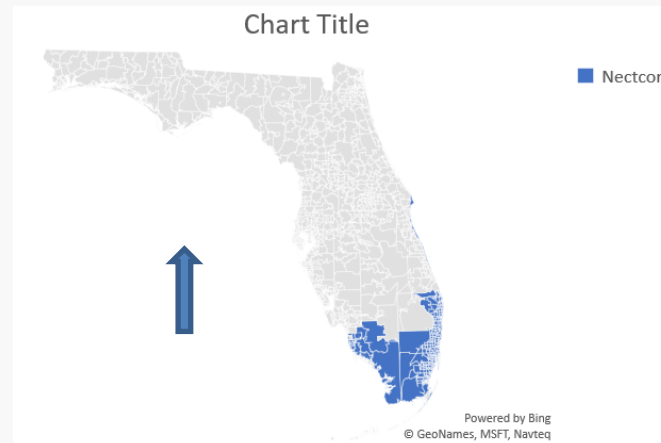
**Assisted Migration is not accepted** by the restoration ecology scientific community.



# Based on Scientific Evidence, Accounting for Change



Lancewood – *Nectandra coriacea*





## How Tropical milkweed can harm Monarchs

Tropical milkweed (*Asclepias curassavica*) is native to Mexico and Central America. It is widely available at Florida's mainstream nurseries and big-box stores because it is easy to grow. However, the use of Tropical milkweed can potentially harm the Monarch.

Commercially purchased Tropical milkweed plants are often treated with systemic chemicals that can be very toxic to Monarch larvae, increasing mortality rates.

Tropical milkweed also has been linked to the transmission of *Ophryocystis elektroscirrha* (OE), a protozoan parasite. When OE spores infect milkweed leaves, they can be carried on the bodies of adult butterflies, which spread the infection to other butterflies. Microscopic spores on the bodies of infected caterpillars are spread to eggs, and infected larvae may not emerge from pupal stage or may emerge as very weak adults.

The use of non-native Tropical milkweed is believed to encourage Monarchs to overwinter in Florida instead of migrating, making them more susceptible to OE. The plant also may escape into natural areas, causing further disruption of migration paths. By staying in Florida and continuously breeding, Monarchs are subject to death from food shortages and freezing temperatures.

Although not documented scientifically, the higher concentration of cardenolides toxin in Tropical milkweed also may have adverse effects.



Tropical milkweed

Photo by Png Utzer

## Insecticides

Commercially grown milkweed plants are sometimes treated with systemic insecticides to keep pests off of them, giving them a better appearance at retail nurseries. However, pesticides can harm Monarch caterpillars that feed on their leaves.

## What we are doing

The Florida Wildflower Foundation is sponsoring research at the Florida Museum of Natural History that is documenting the effect of various insecticides on Monarch caterpillar mortality. This information will help growers produce the best plants possible without harming Monarch caterpillars.



Photo by Png Utzer

## Monarch nectar plants

**Plant these natives along with milkweed to provide nectar to Monarchs:**

Blazing star (*Liatris* spp.)  
Snow squarestem (*Melanthera nivea*)  
Chaffhead (*Carphephorus* spp.)  
Climbing aster (*Symphotrichum carolinianum*)  
White crownbeard (*Verbesina virginica*)  
Flattop goldenrod (*Euthamia caroliniana*)  
Goldenrod (*Solidago* spp.)  
Mistflower (*Conoclinium coelestinum*)  
Scorpiontail (*Heliotropium angiospermum*)  
Spanish needles (*Bidens alba*)  
Yellowtop (*Flaveria linearis*)

## More information

- Florida Wildflower Foundation ([www.FlaWildflowers.org](http://www.FlaWildflowers.org))
- Florida Museum of Natural History ([www.floridamuseum.ufl.edu/discover-butterflies/brochures/](http://www.floridamuseum.ufl.edu/discover-butterflies/brochures/))
- Monarch Joint Venture ([www.monarchjointventure.org](http://www.monarchjointventure.org))
- Monarch Watch ([www.monarchwatch.org](http://www.monarchwatch.org))
- Xerces Society ([www.xerces.org/monarchs](http://www.xerces.org/monarchs))

Yes, wildlife utilizes nonnative plants, but that is not always a good thing.



Swamp milkweed  
*Asclepias incarnata*



Butterflyweed  
*Asclepias tuberosa*



Help save Monarch butterflies. Your purchase of the Florida Wildflower license plate supports Monarch research and the planting of native milkweed. Get yours today at your county tag office.

Produced in partnership with the Florida Scenic Highways program. More information at [www.FloridaScenicHighways.com](http://www.FloridaScenicHighways.com).



# Be Creative and Have Fun!

f The Institute for Regional Conservation

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**John Miller** Everyone did a great job! It's going to be a fantastic park eventually! Here's a pic of Iain's boat making a delivery.



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1 Reply

**Bill Bathurst** great work , sorry I missed this one

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### What is a Rain Garden?



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 unfilled, 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 a [list](#) of local nurseries that sell native plants.

### Water Conservation: Rain Barrels and Native Plants

A joint workshop between the City of Hollywood and the City of Hallandale



#### Native Plants for Rain Gardens

Plants that need consistently moist or flooded soil

Plant
Asplenium platyneuron
Begonia filifolia
Callitriche canadensis
Chamaenerion angustifolium
Chamaenerion maculatum
Chamaenerion sp. (red)
Chamaenerion sp. (yellow)
Chamaenerion sp. (purple)
Chamaenerion sp. (white)
Chamaenerion sp. (pink)
Chamaenerion sp. (orange)
Chamaenerion sp. (green)

Plants that can tolerate periodically flooded soil


Plant
Asplenium platyneuron
Begonia filifolia
Callitriche canadensis
Chamaenerion angustifolium
Chamaenerion maculatum
Chamaenerion sp. (red)
Chamaenerion sp. (yellow)
Chamaenerion sp. (purple)
Chamaenerion sp. (white)
Chamaenerion sp. (pink)
Chamaenerion sp. (orange)
Chamaenerion sp. (green)

#### 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



[Click Here](#)

# Play the Long Game

