#### "The Institute for Regional Conservation Conservation and Gardening in a Changing World"

District X Fall Meeting, Florida Federation of Garden Clubs
October 8, 2020





George D. Gann
<a href="https://www.regionalconservation.org">www.regionalconservation.org</a>
<a href="https://www.ser.org">www.ser.org</a>



International Policy Lead Chief Conservation Strategist

#### Acknowledgements

- Maria Wolfe and Carol Coleman for the invitation and coordination.
- Kimberlee Duke Pompeo, Jerry Lower, Barbara Hadsell, Reina Snyder, and Patricia Binder for collaboration on publication projects.
- All the IRC folks, past and present, and all our funders and conservation partners.
- Photographers, including Roger Hammer, Keith Bradley, Shirley Denton,
   James Johnson and many others.

Our Program



IRC aims to protect, restore and manage all biodiversity on a regional basis, and to prevent local extinctions of native plants, animals and ecosystems. All conservation is ultimately local. **2019 was our 35**<sup>th</sup> Anniversary Year. Staff of 8, 13 Associates and 7 Board Members.

Floristic and faunistic inventories

Rare species research

**Ecological restoration design and implementation** 

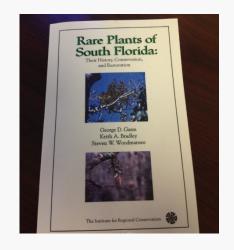
**Educational training and workshops** 

Online tools and resources

**International policy** 

#### Some IRC Resources

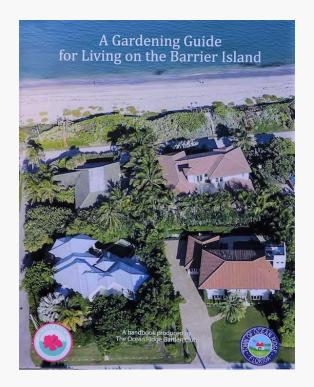
















#### The Institute for Regional Conservation

#### Get Your Hands in the Sand ~ Native is NOT a Dirty Word!

by Kimberlee Duke Pompeo, FFGC District X, PAT Committee, Vice Chairman of Barrier Islands with George D. Gann, IRC Founder



Were you told as a youth not to play in the dirt? Good chance most of us were. Yet, I don't think our parents meant for us to stop caring about mother earth. Here's how the environment sees us. It's as simple as a multiple-choice question. When asked, do you crusade for the environment? ...which do you check?

] Never [	] Rarely	[ ] Sometimes	[ ] Always
-----------	----------	---------------	------------

If you checked the last box "Always" – read no more, go straight to the end where you'll find your like-minded [donate] button for a modest contribution towards nature's shouldered burden.

If you checked either of the first three than I'm afraid you have a little required reading to do. Don't worry, though. You're not alone. We're writing as a result.

People often view nature conservation and traditional views of gardening as having to choose one way or the other. It's simply not true. It's not a contrast like *hardscapes* – the stepping stones in your garden from the *softscapes* – the feathery, green ferns that delicately sway in the wind. Gardeners know that it resides in "the variety" of methods that make a visually appealing garden. Just as there are varietals of soil and dirt to grow particular flowers and foods, natives offer intrinsic beauty in a variation of colors and textures, forms and functions with the powerful contribution towards mitigating climate change.



#### 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!

#### **Find Native Plants!**

Acknowledgements and past sponsors
Become a sponsor!

#### **Emergent Sponsors:**





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SECOND EDITION SUMMARY

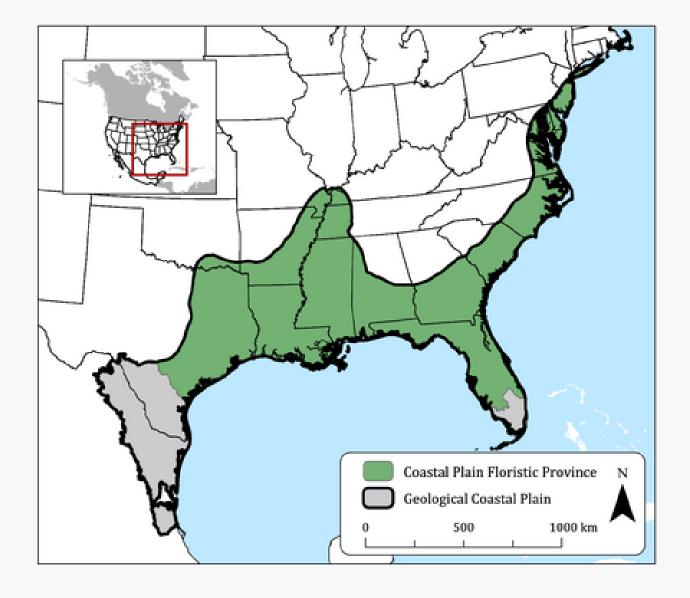




International Policy Work on Ecological Restoration,
Conservation, and
Sustainability

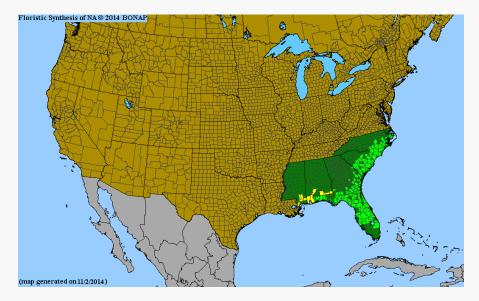


South Florida Conservation Context

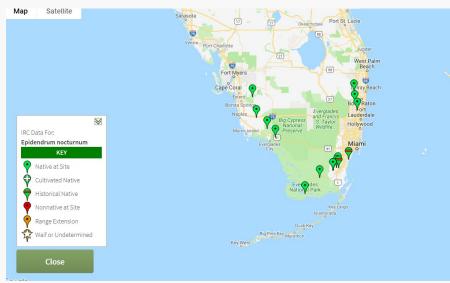


North American Coastal Plain Global Biodiversity Hotspot Noss et al. 2014

## South & North Range Limits in South Florida



Gordonia lasianthus (BONAP.org)



Epidendrum nocturnum (IRC)



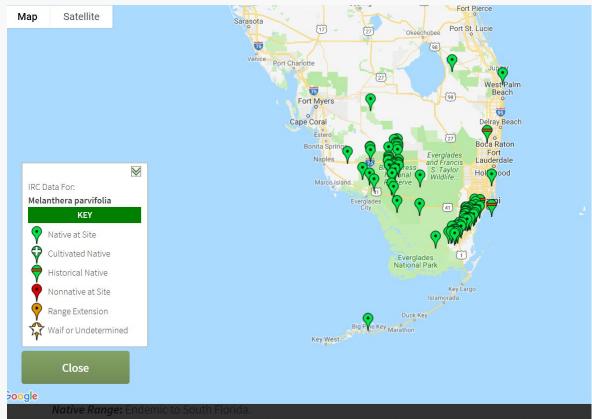
K. Bradley



R. Hammer

## *Melanthera parvifolia*Pineland blackanthers



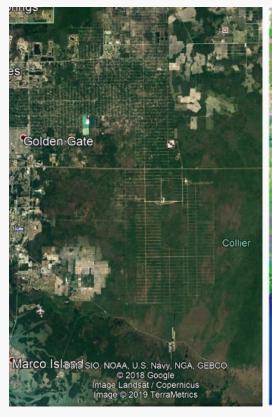


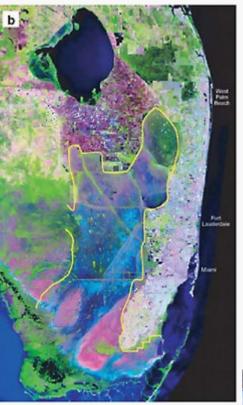
South Florida and Florida Endemics, >110 taxa in South Florida, of which ~50 have been recorded in Palm Beach County.

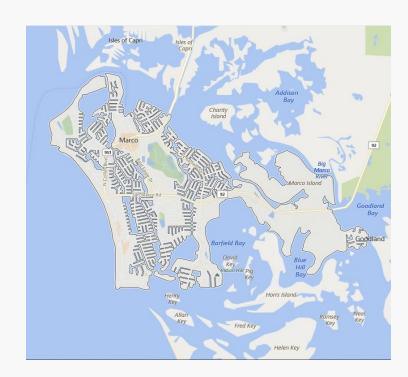
**Local Biodiversity Matters** 



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







- Hydrological transformation
- Coastal development & erosion
- Destruction of critical upland habitat in the interior
- Similar issues in St. Lucie and Indian River counties

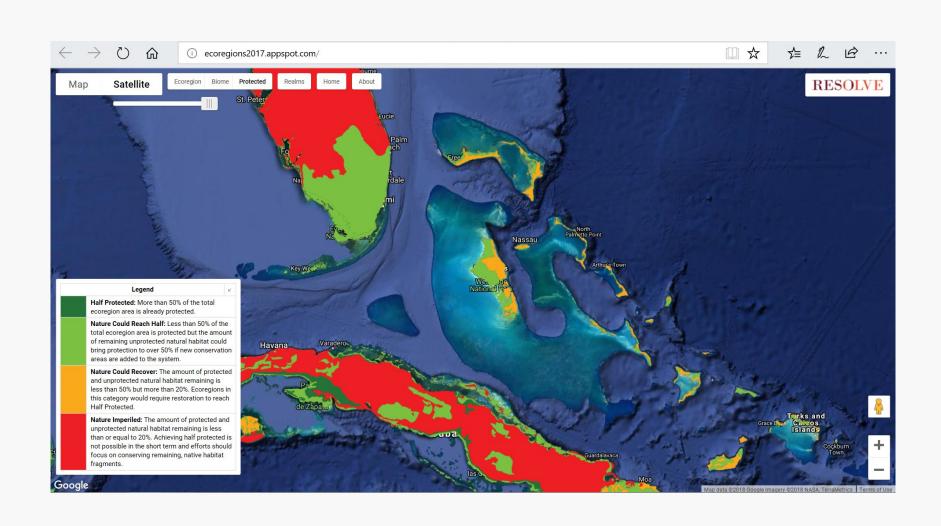


>50% of region in conservation; United Nations Convention on Biological Diversity (CBD) 2020 Protected Areas Target = 17%. So everything should be great.

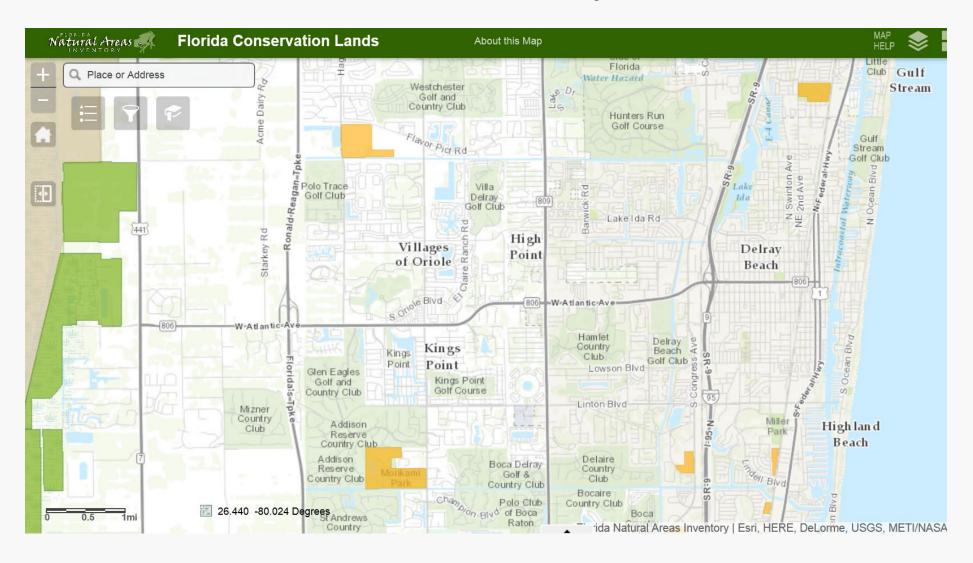


## Nature Needs Half

846 Ecoregions, Protect 50% by 2050



#### **Our Local Reality**



Conservation areas in and around Delray Beach.

#### 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'

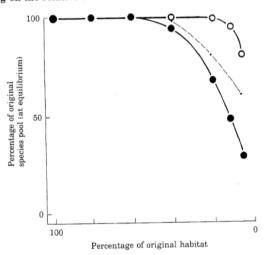


FIGURE 4. The number of species remaining in each species pool as fragmentation proceeds. Closed circles show the pool of species with large area requirements and low vagility. Open circles show the species with less stringent area requirements. The small dots connected by the dashed line depict the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





**Biodiversity**, or biological diversity, is the diversity of life at the ecosystem, species, and even genetic level.

**All** biodiversity is important because of its **intrinsic value**, as well as its role is providing **ecosystem services** essential to human survival and wellbeing.

The Floristic Inventory of South Florida

## The Floristic Inventory of South Florida 1995 – present

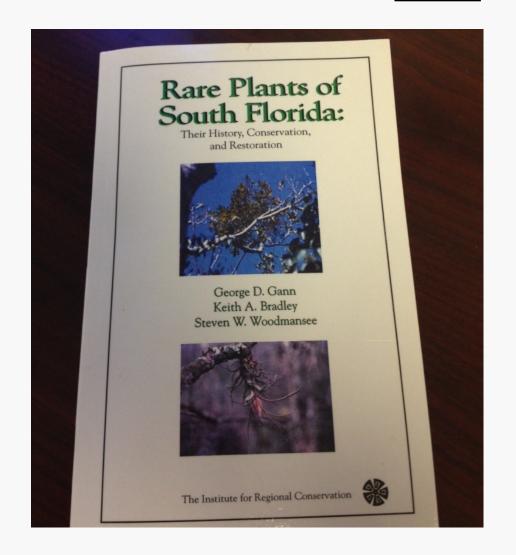


Castellow Hammock Park  County: Miami-Dade County Size: 11.79 acres Lettucker 25.39979; Lorgitude: -80.45528° Lett											
Group By Family: Show Results											
Scientific Name:	Occurrence:	Native Status:	Introduced Status:	Invasive Status:	Cultivated Status:	Reference:	Vouche				
Acanthaceae											
Barleria cristata	Present	Not Native, Naturalized	Introduced	Potentially Invasive		2772	2772				
Ruellia blechum	Present	Not Native, Naturalized	Introduced	Ruderal		14757					
tuellia simplex	Present	Not Native, Naturalized	Introduced	Potentially Invasive		14757					
Ruellia succulenta	Present	Native	Not Introduced	Native		14757					
Amaranthaceae											
Achyranthes aspera var. aspera	Present	Not Native, Naturalized	Introduced	Ruderal		14757					
Amaranthus spinosus	Present	Not Native, Naturalized	Introduced	Ruderal		14757					
Anacardiaceae											
Mangifera indica	Present	Not Native, Naturalized	Introduced	Invasive		14757					
Metopium toxiferum	Present	Native, Naturalized	Not Introduced	Native		14757 14757					
Rhus copallinum	Present	Native	Not Introduced	Native		14757					
Schinus terebinthifolius	Present	Not Native, Naturalized	Introduced	Invasive		14757					
Toxicodendron radicans	Present	Native	Not Introduced	Native		14757					
Anemiaceae											
Anemia adiantifolia	Present	Native	Not Introduced	Native		14757					
Annonaceae											
Annona glabra	Present	Native	Not Introduced	Native		14757					
Apiaceae											
Apraceae Cyclospermum leptophyllum	Present	Not Native, Naturalized	Introduced	Ruderal		14757					
	Present	Not Native, Naturalized	Introduced	nuuerai		14/3/					
Apocynaceae											
Angadenia berteroi	Present	Native	Not Introduced	Native		14761					
Asclepias curassavica	Present	Not Native, Naturalized	Introduced	Invasive		14757					
Asclepias viridis	Present	Native	Not Introduced	Native		14761					
Catharanthus roseus	Present	Not Native, Naturalized	Introduced	Ruderal		14756					
chites umbellatus	Present	Native	Not Introduced	Native		14757					
Metastelma scoparium	Present	Native	Not Introduced	Native		14757					
Aquifoliaceae											
lex cassine	Present	Native	Not Introduced	Native		14757					
lex krugiana	Present	Native	Not Introduced	Native		14757					
Araceae											
pipremnum pinnatum	Present	Not Native, Cultivated Only	Not Introduced								
Epipremnum pinnatum cv. Aureum	Present	Not Native, Coldvated Only Not Native, Naturalized	Introduced	Invasive		14757					
Monstera deliciosa	Present	Not Native, Cultivated Only		Cultivated Only	Cultivated	14756					
· · · · · · · · · · · · · · · · · · ·	Describ	Not Native New reliand	Tabando and			14757					

#### **SOME QUESTIONS**

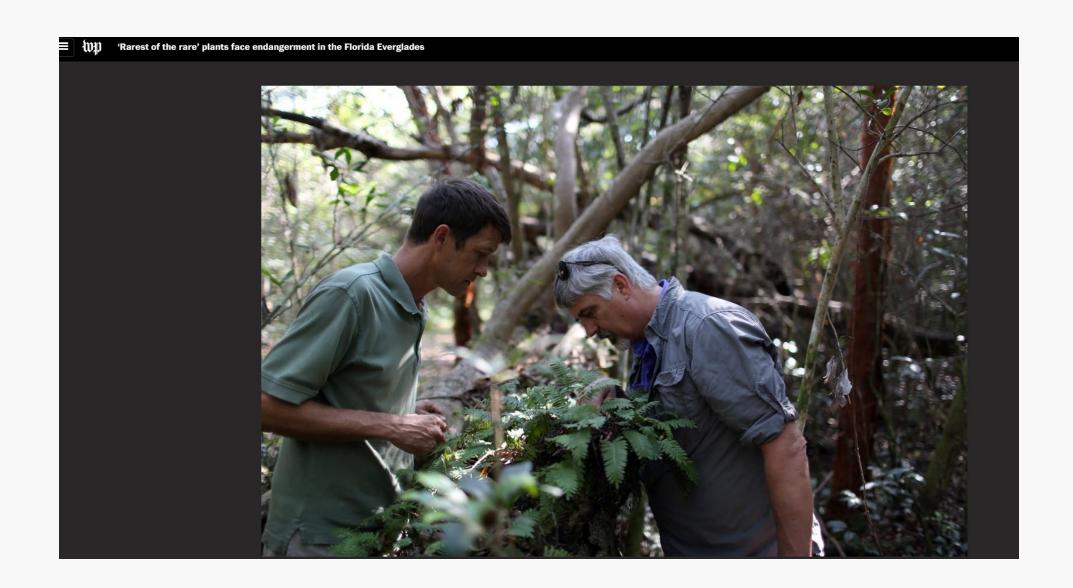
- Are very small, fragmented conservation areas important?
- How well does the current conservation system protect rare vascular plants?
- Have there been regional extirpations?

## 2002





1 in 4 native plant species were critically imperiled or possibly extirpated. About 8% were reported as possibly extirpated (now down to about 6%)



Washington Post, March 2015.







#### **Flora of Broward County**

(today's numbers)

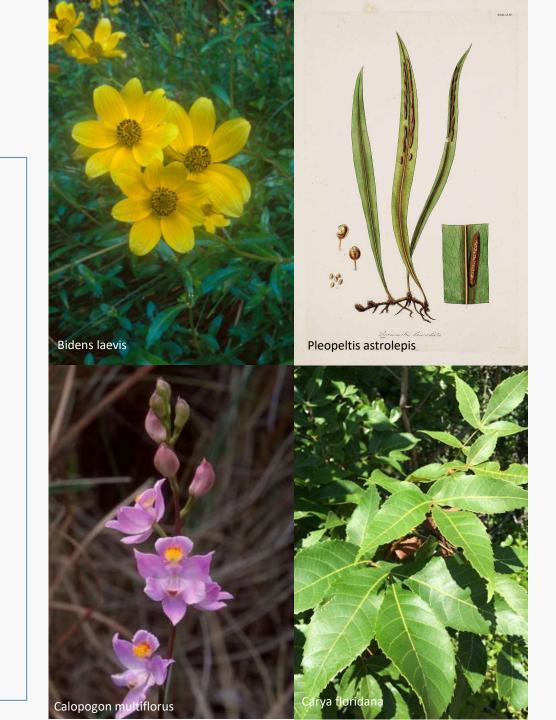
731 native taxa 10-20% are likely extirpated already

Working list of 150+ taxa being reviewed

\*\*\*\*\*\*

Extirpations in South Florida (2002-present)
6%, slight increase expected

Extirpations in Florida Keys (2007-present)
13%, likely to go up



Global Change

## Restoration: a Global Perspective

## 35 Years Ago

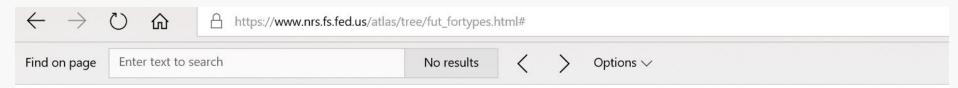
"Particularly hazardous to Florida is the potential for a **global climate change** related to tropical deforestation and the excess burning of fossil fuels. A slight **rise in sea level** could destroy many of our native plant communities..."

"In the United States, and particularly in Florida, preservation has been the basis of the native plant movement. More recently, **restoration** as a conservation alternative has received some attention, although it is certainly not accepted by all."

"By concentrating on **sustainable development**, rather than preservation, as a goal international conservation movements seem to be moving ahead in terms of meeting the environmental needs of the future."







#### **Potential Future Forest Type Changes**

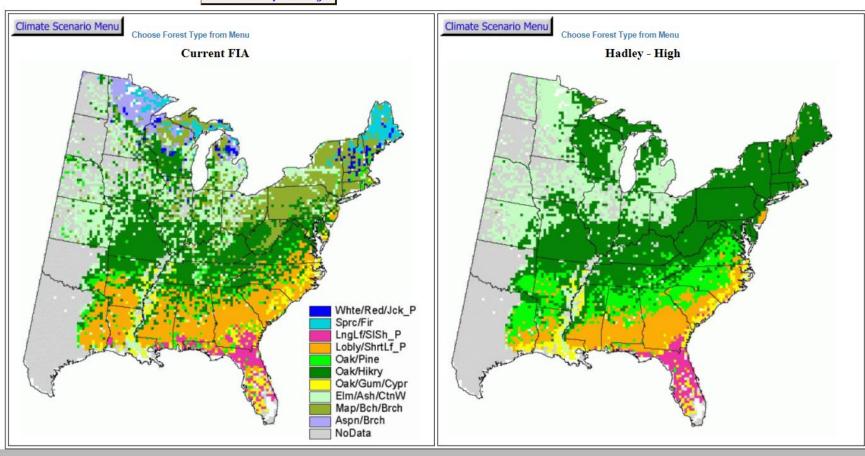
The links below allow comparison of maps of potential forest-type changes according to the various GCM scenarios.

IMPORTANT: Make sure you read the help file before interpreting the

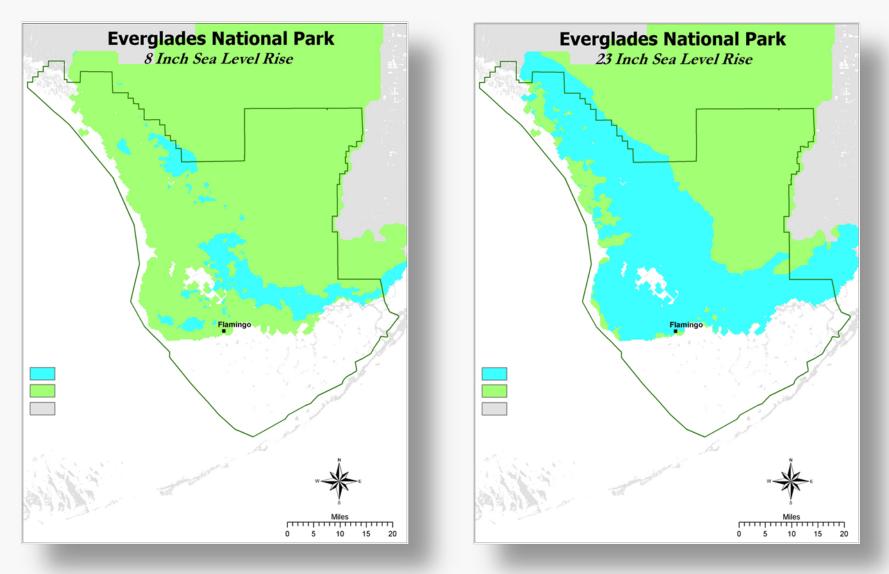
changes.



View Summary of Changes



#### Sea Level Rise

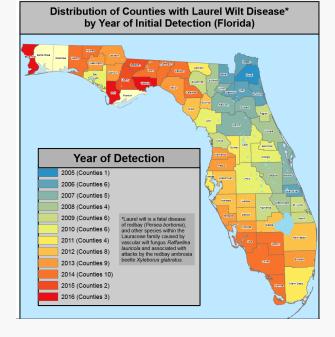


Everglades National Park scenarios by end of this century from 2007 IPPC projections.

## Extreme Storms, Pulse Events, and Ecosystem Reassembly

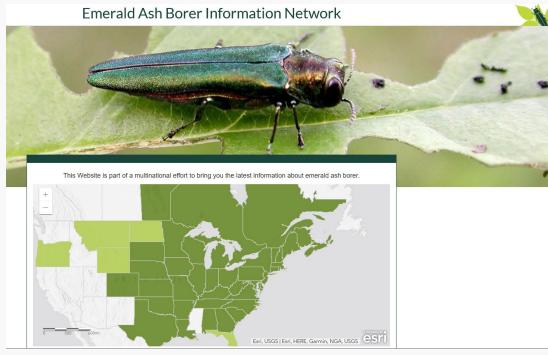




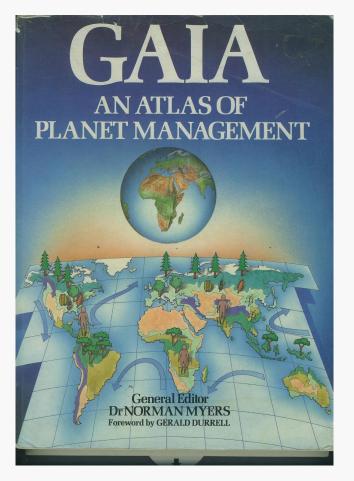


# Invading Pests and Diseases

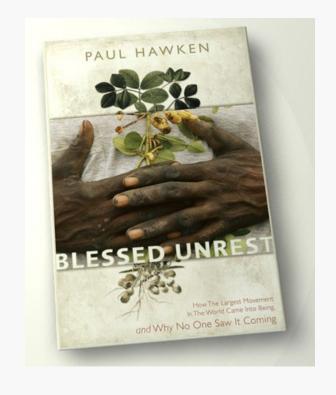




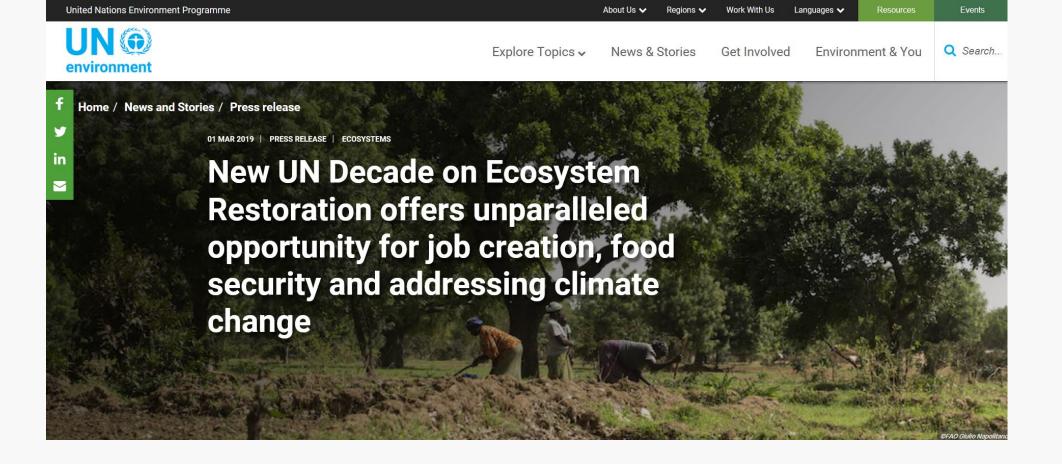
# Ecological Restoration The Key to Our Future



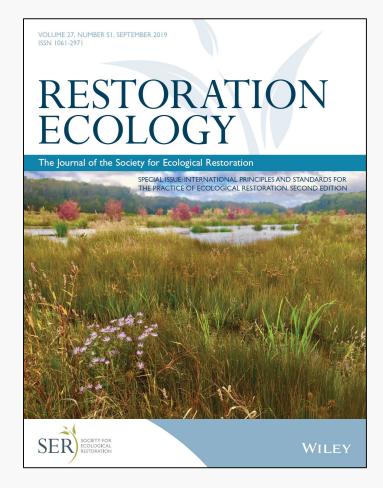
In 1984 Norman
Myers estimated that
there were 12,130
international nonprofit groups (INGOS)
worldwide, mostly
dealing with
environmental and
social issues.



**Paul Hawken** 2007: estimated that there were more than 1,000,000 non-profit groups and community organizations dedicated to the "environmental and social justice movement".



"The UN Decade on Ecosystem Restoration is both urgently needed and globally appreciated," said George Gann, SER International Policy Lead. "Achieving the goals of this new UN Decade will require continued enthusiasm and funding for this work, as well as a common understanding of how to design and implement successful restoration projects that proactively and collaboratively engage local communities." SER Media Release, <a href="https://www.ser.org">www.ser.org</a>



www.ser.org/Standards

Updated International Principles and Standards launched at SER2019 in South Africa, simultaneously in *Restoration Ecology* and by SER.



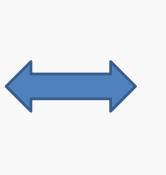
# Global and Local Perspectives





World Conference on Ecological Restoration Cape Town, South Africa 2019

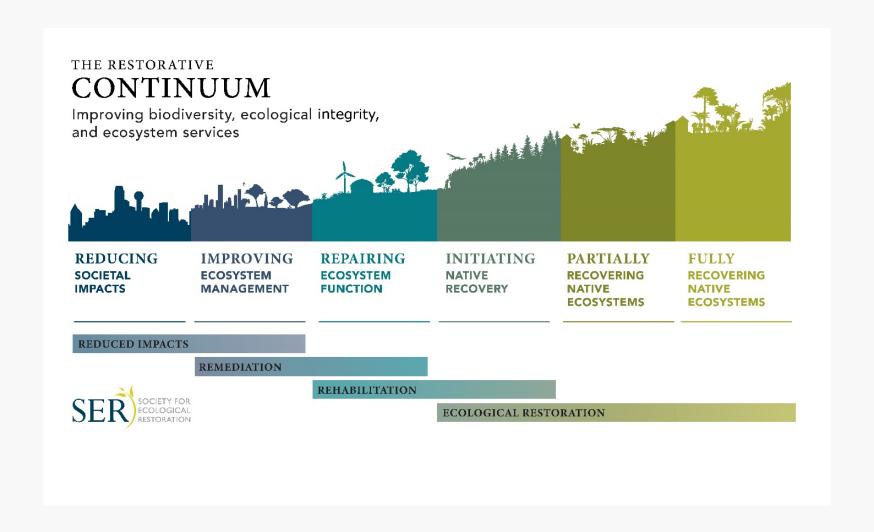






Restoration site, No Name Key National Key Deer Refuge, FL, USA





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

How Can You Help?

### Collaborate, Collaborate!

















# Identify Opportunities and Celebrate Success!









#### Restoring the Gold Coast





Collaborators



































#### What We Have Done Well



move sand



plant sea-oats and a few other species



recover sea turtles

# **Dune Assessments**





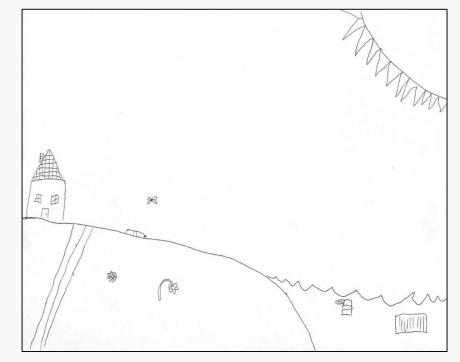






# Outreach





Banyan Creek
Elementary
Kindness Matters
Club
February 2020



Degraded

Dune







As part of our **Restoring the Gold Coast** program, IRC is offering native Biodiversity Starter Plant Kits for coastal gardens 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.

## **OUR STARTER PLANT KITS**

#### Beach Dune and Coastal Grasslands Starter Plant Kits

Each beach dune starter kit contains 5 plants native to the beaches and dunes of southern Palm Beach County. Our Spring 2020 Kits contain: (1) **Baycedar**, (1) **Sea-lavender**, (1) **Inkberry**, (1) **Seaside joyweed** or **Yellow joyweed**, and (1) rare plant surprise. Each kit contains (1) 10" container, (2) 6" containers, and (2) 3-4" containers. These kits are perfect for coastal dunes with an active pioneer zone with established sea-oats, native dune vines, and other pioneer species. The price for each kit is \$75.00.



#### Four Larval Host – 10 Coastal Butterflies





Cassius Blue



**Large Orange Sulphur** 



**Martial Scrub-Hairstreak** 



**Common Buckeye** 



**Gray Hairstreak** 



**Phaon Crescent** 



**White Peacock** 



**Gulf Fritillary** 



Julia Heliconian



# Green Delray Program and Lake Ida Parcel Restoration



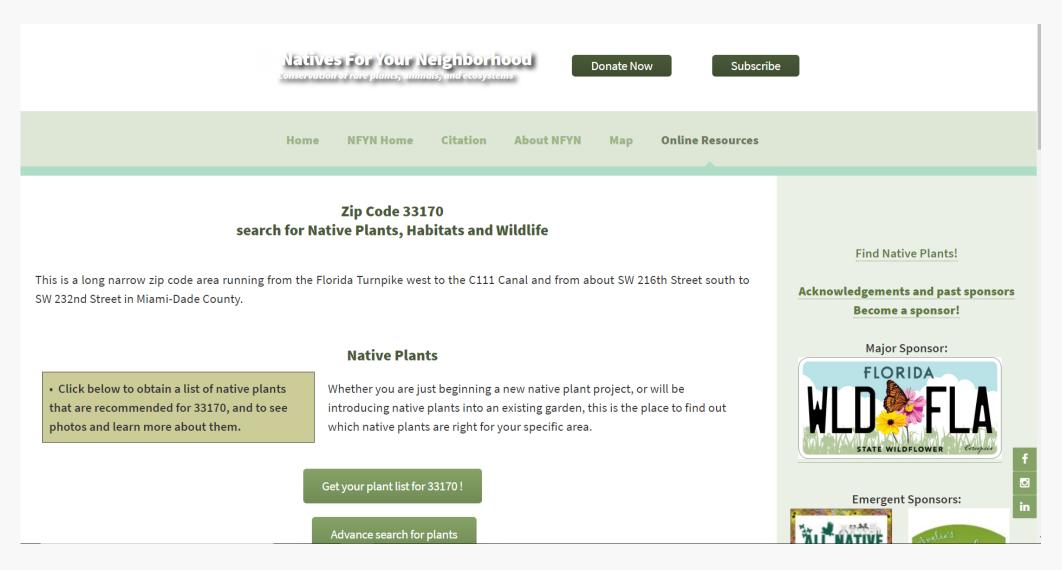






# We Must Restore Degraded Ecosystems, Small and Large, Fragmented and Connected





## 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
- 3) Increase Connectivity
- 4) Recover Rare Species

PRINTER FRIENDLY VERSION

Please scroll to the bottom for more images.

#### Piriqueta, Pitted stripeseed

#### 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.

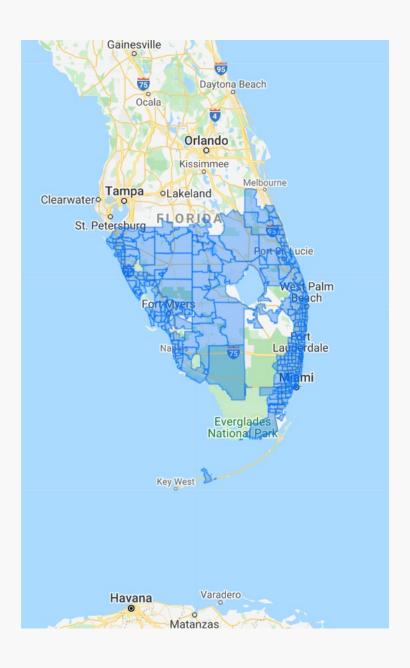
Salt Water Tolerance: Low; does not tolerate long-term flooding by salt or brackish water.



Copyright by: James Johnson, 2014

In habitat, Everglades National Park, Florida

Expand















A Board Member Login





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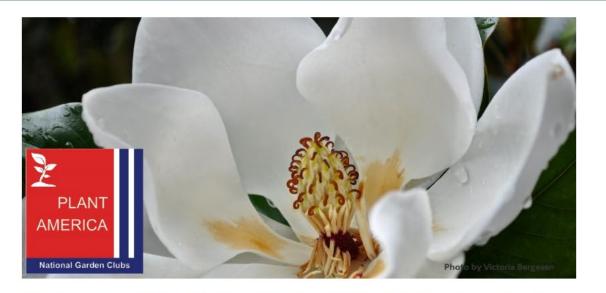
SEARCH O

HOME | PLANT AMERICA

### **Plant America**

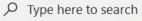
Inspiring Gardens Across the Americas





The theme for President Gay Austin's administration is Plant America, a singularly focused initiative on gardens and gardening.

























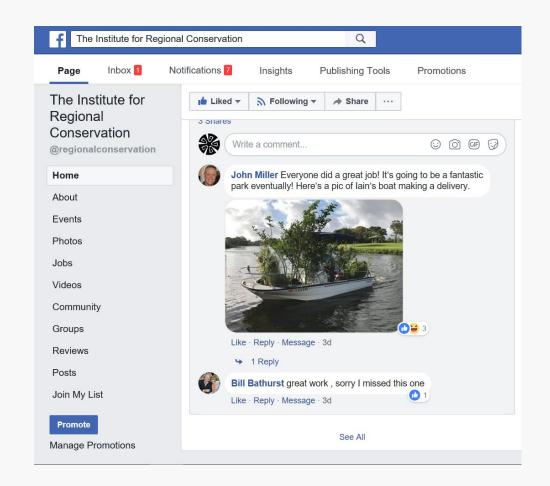


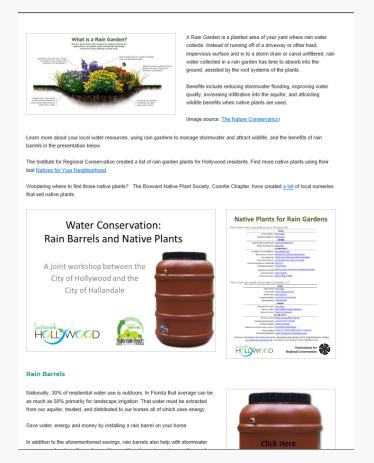




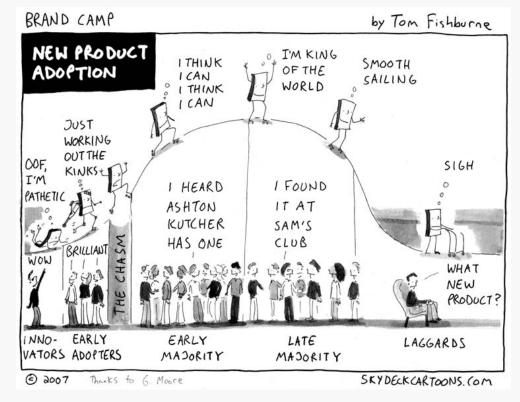


#### Be Creative and Have Fun

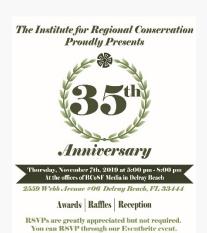




# Play the Long Game







Details at regionalconservation.org, IRCs Facebook page, and E-Newsletter. Please share the word!

#### THANK YOU!

