“The Institute for Regional Conservation
Conservation and Gardening in a Changing World”

Ocean Ridge Garden Club
March 8, 2021



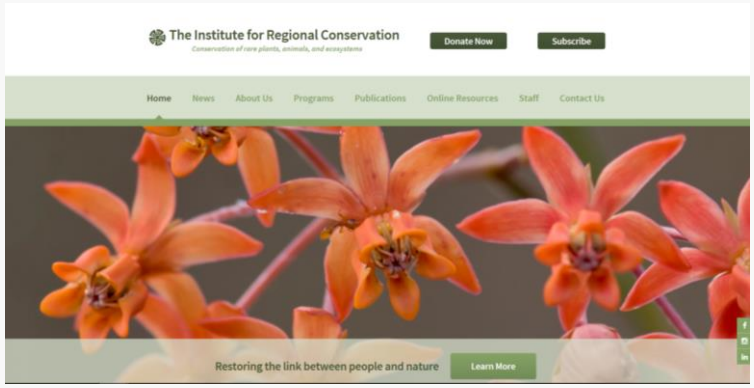
George D. Gann
www.regionalconservation.org
www.ser.org

International Policy Lead

Chief Conservation Strategist

Acknowledgements

- **Carol Besler, Jackie Reed, and Mary Ann Cody** of the ORGC for the invitation and coordination.
- **Jerry Lower, Kimberlee Duke Pompeo, Kristine de Haseth, Phil Besler, Tracey Stevens, Ocean Ridge Town Commission, Mary Ann Cody,** and many others for support of our Restoring the Gold Coast program in Ocean Ridge. (Also, **Rebecca Harvey, Surfrider** and others in Boynton Beach and surrounds!)
- **Kimberlee Duke Pompeo, Jerry Lower, Rob Barron, 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.



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 35th Anniversary Year.** Staff of 8, 12 Associates and 7 Board Members.

Floristic and faunistic inventories

Rare species research

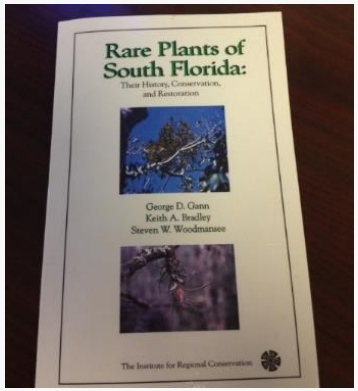
Ecological restoration design and implementation

Educational training and workshops

Online tools and resources

International policy

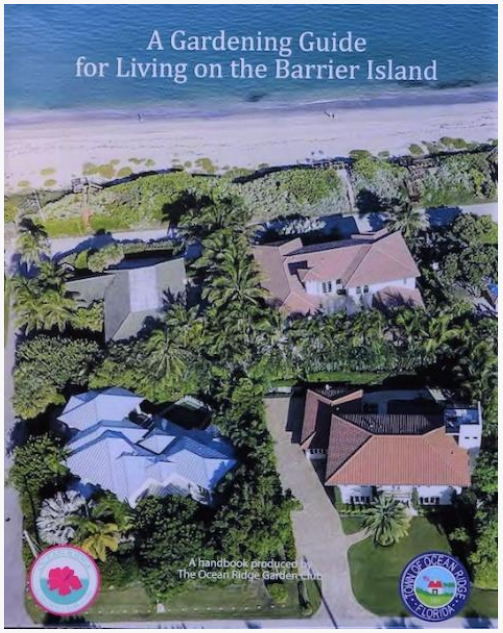
Some IRC Resources



South Florida

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

Plantas de la Isla de / 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



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.

“The Institute for Regional Conservation
Conservation and Gardening in a Changing World”

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



SER SOCIETY FOR ECOLOGICAL RESTORATION

International Policy Lead

George D. Gann
www.regionalconservation.org
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The Institute for Regional Conservation

Chief Conservation Strategist

Special thanks to Maria Wolfe of the Wellington Garden Club!

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 shrub land. 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

▲ Photo by Kimberlee Duke Pompeo

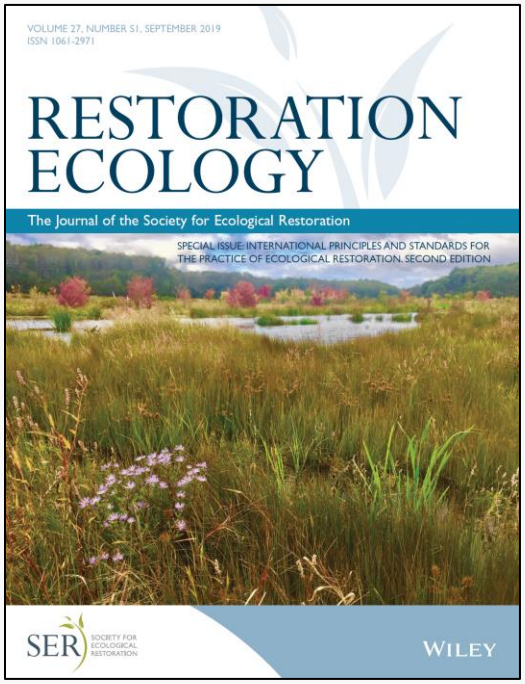
Seagrapes and Biodiversity

A workshop contributing to understanding the issues behind seagrape trimming, ecological restoration, and coastal conservation

Institute for Regional Conservation

December 9, 2020

Ecological Restoration and Community Outreach



SER SOCIETY FOR ECOLOGICAL RESTORATION AUSTRALASIA

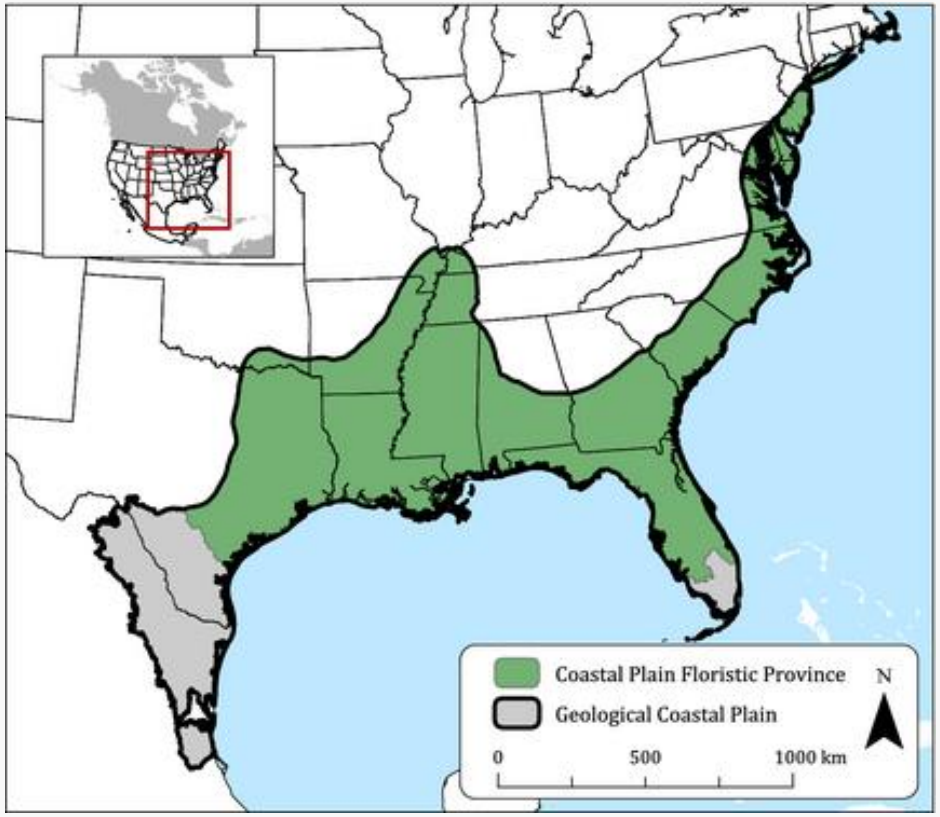
The Institute for Regional Conservation

www.ser.org/Standards

International Policy Work on Ecological Restoration, Conservation, and Sustainability

Downloaded about 20,000 times in first 18 months

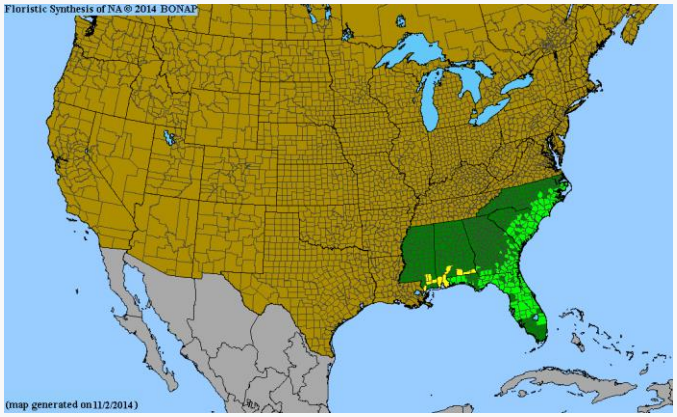
South Florida Conservation Context



North American Coastal Plain Global Biodiversity Hotspot

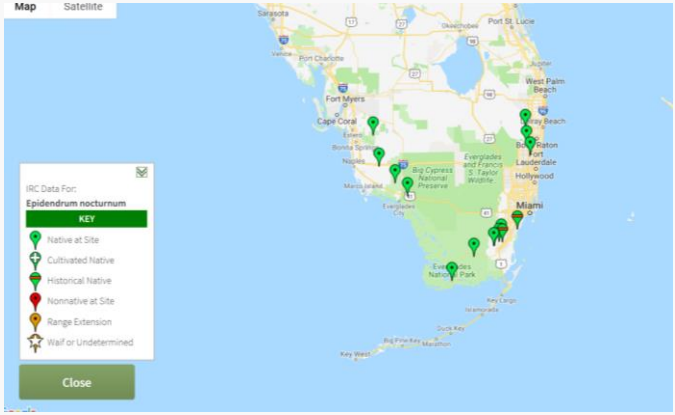
Noss et al. 2014

South & North Range Limits in South Florida



Gordonia lasianthus (BONAP.org)

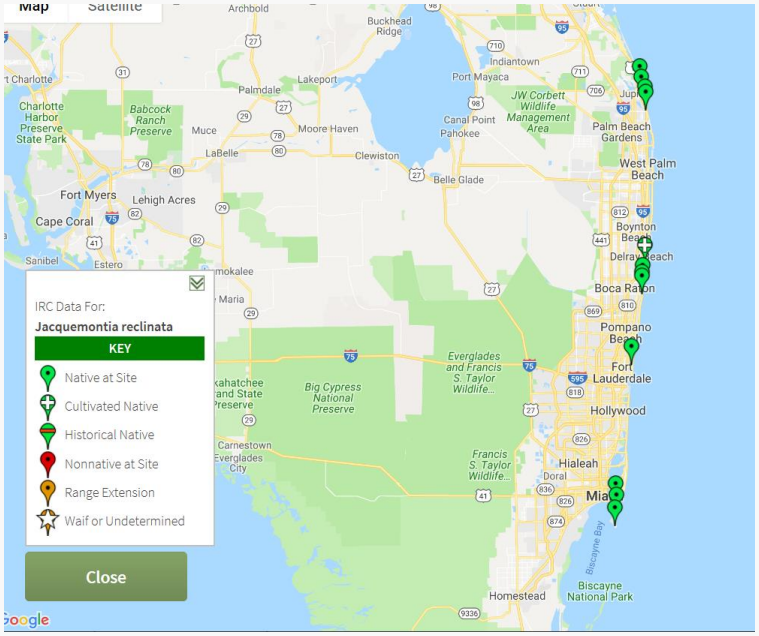
K. Bradley



Epidendrum nocturnum (IRC)

R. Hammer

South Florida Endemics (probably >50)



Jacquemontia reclinata
Beach clustervine

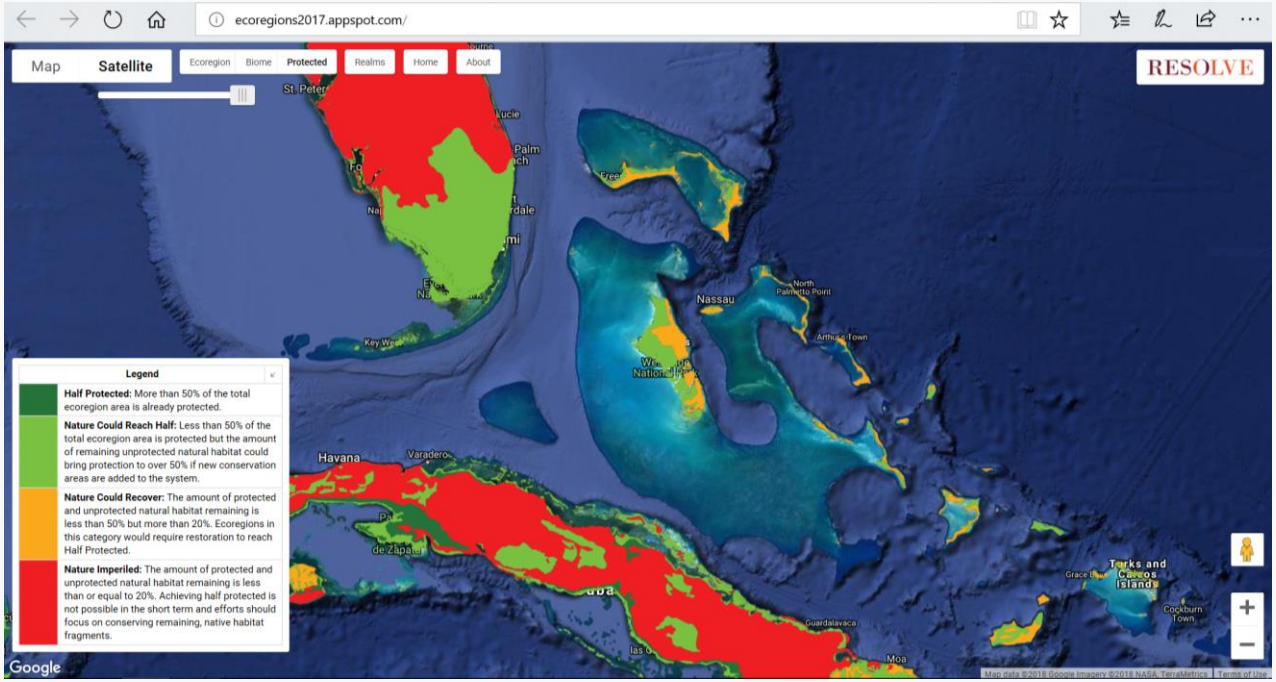
Local Biodiversity Matters

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

>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



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'

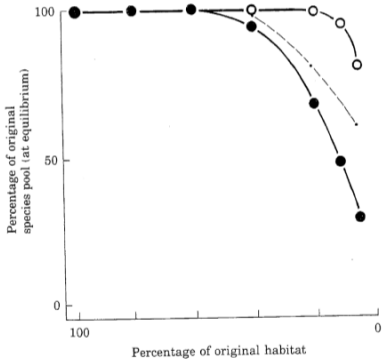


FIGURE 4. The number of species remaining in each species pool as fragmentation proceeds. Closed circles show the pool of species with large area requirements and low vagility. Open circles show the species with less stringent area requirements. The small dots connected by the dashed line depict the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

Wilcove 1986


Some species and groups go faster.
© Holly L Salvato
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© Holly L Salvato


Some go slower.
©Shirley Denton

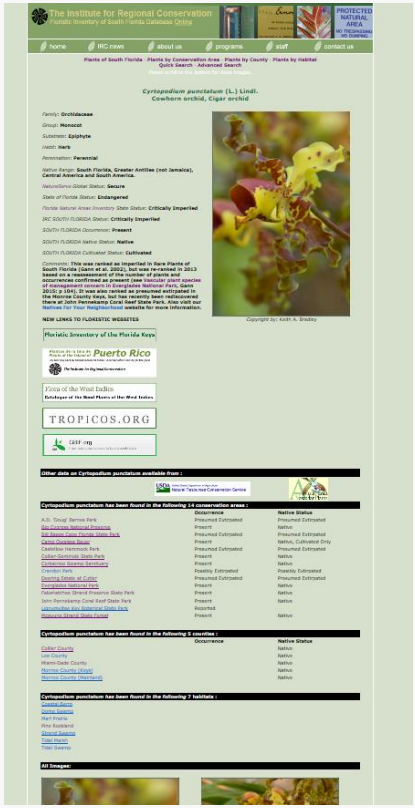
Plant Biodiversity is Key to Animal Biodiversity


Cicada


Ceraunus Blue

Images by Mary Trulio Fesmire

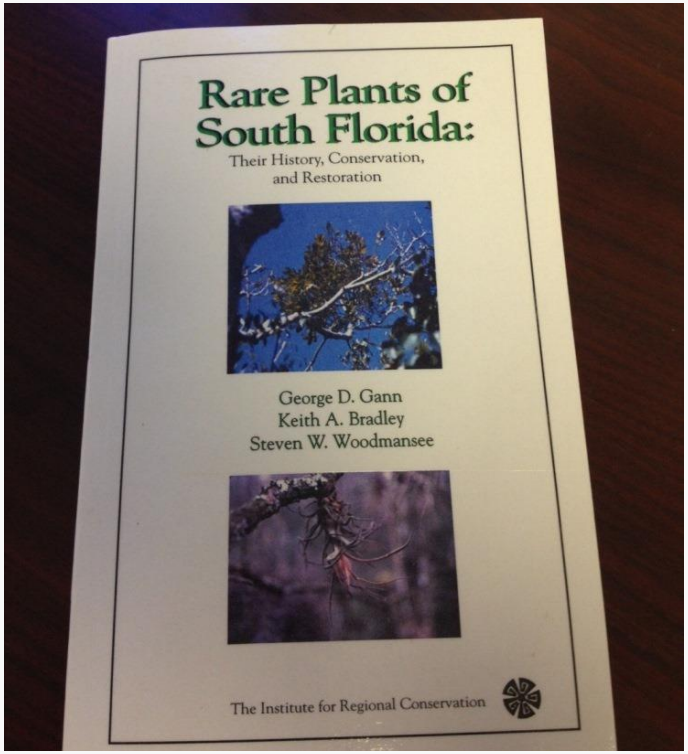
The Floristic Inventory of South Florida
1995 – present



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




Bulbophyllum pachyrachis

1 in 4 native plant species were critically imperiled or extirpated.
About 8% were reported as presumed or possibly extirpated or extinct (now 6%).
Four South Florida endemic taxa reported as extinct in Knapp et al. (2020) were documented by IRC in 2002.

Washington Post, March 2015. Many others around the world!

Ecological Restoration

The Key to Our Future

Page 4, Spring 1987, PALMETTO

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."

George 1985

United National Decade on Ecosystem Restoration 2021-2030

“There has never been a more urgent need to restore damaged ecosystems than now”

Global and Local Perspectives

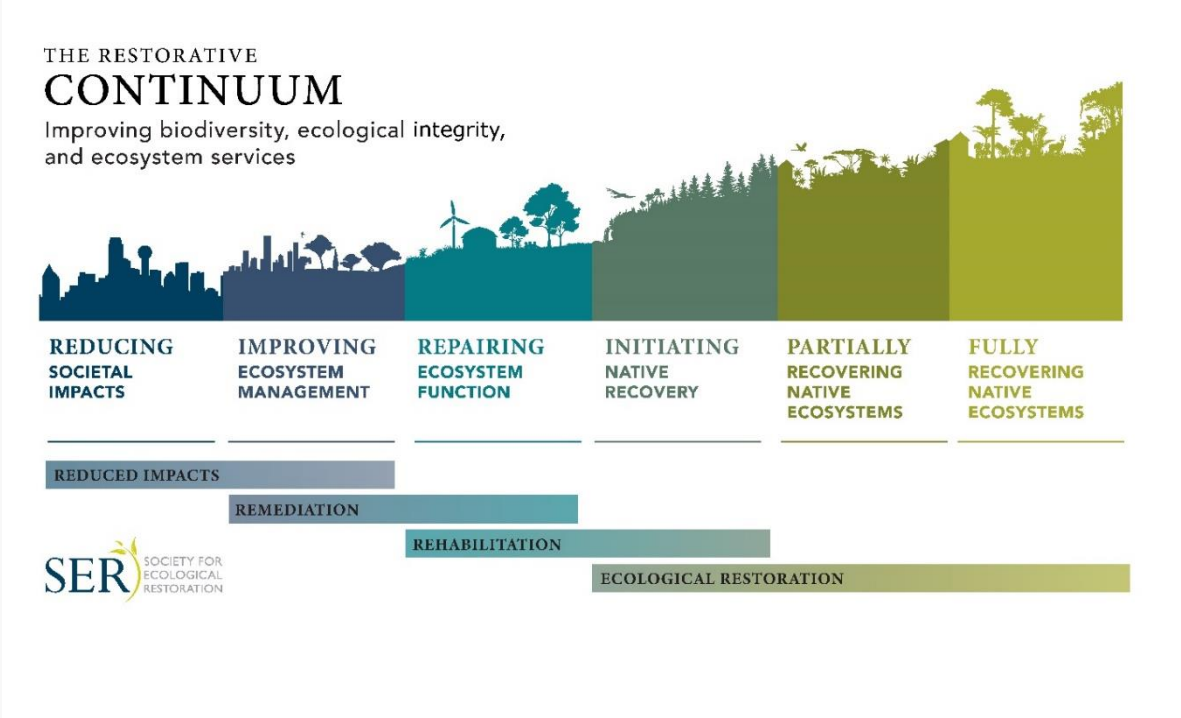
SER SOCIETY FOR ECOLOGICAL RESTORATION

The Institute for Regional Conservation

World Conference on Ecological Restoration
Cape Town, South Africa 2019

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

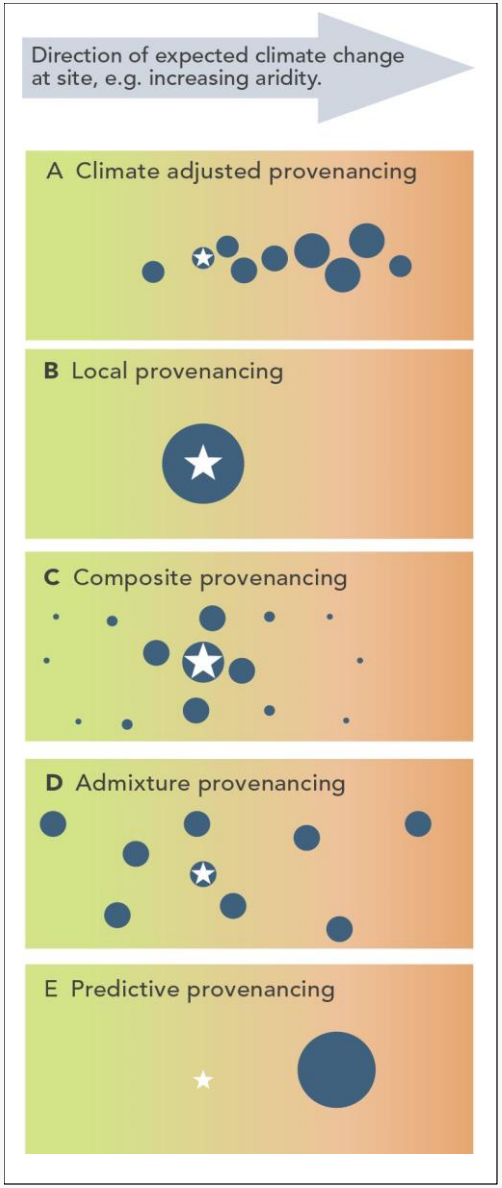
www.ser.org/Standards



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).

Provenancing strategies for revegetation (reprinted from Prober et al. 2015). The star indicates the site to be revegetated and the circles represent native populations used as germplasm sources. The circle size indicates the relative quantities of germplasm included from each population at the revegetation site.

These strategies can also be applied to animals and soil biota.



Restoring the Gold Coast

Major Sponsors

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Where Did the Native Biodiversity Go?

Southern Palm Beach County, circa 1970

What We Have Done Well

move sand

plant sea-oats and a few other species

recover sea turtles

A diverse dune is a healthy dune, and our first line of defense against sea level rise

The Delray dune is loaded with rare plants.

But lots of things are missing!

Focal Gold Coast Species

Beach ragweed
Ambrosia hispida

- Florida Keys north to Brevard County, but nearly extinct along Florida east coast.
- Introduced at Atlantic Dunes Park (2016) and Delray Municipal Beach (1993; still present).

Beach Clustervine
Jacquemontia reclinata

- Federally endangered. Miami-Dade to Martin County (endemic).
- Reintroduced to Atlantic Dune 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-nourished beaches.
- Present at Atlantic Dunes Park and Delray Municipal Beach. Plants added in 1995.

Pineland Croton
Croton linearis

- Florida Keys to St. Lucie County. Nearly extinct 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
Strymon acis bartramii

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

Florida prairieclover
Dalea carthagenensis var. *floridana*

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

Dune Assessments

Opportunities

Excellent Opportunities for Restoration and Connectivity

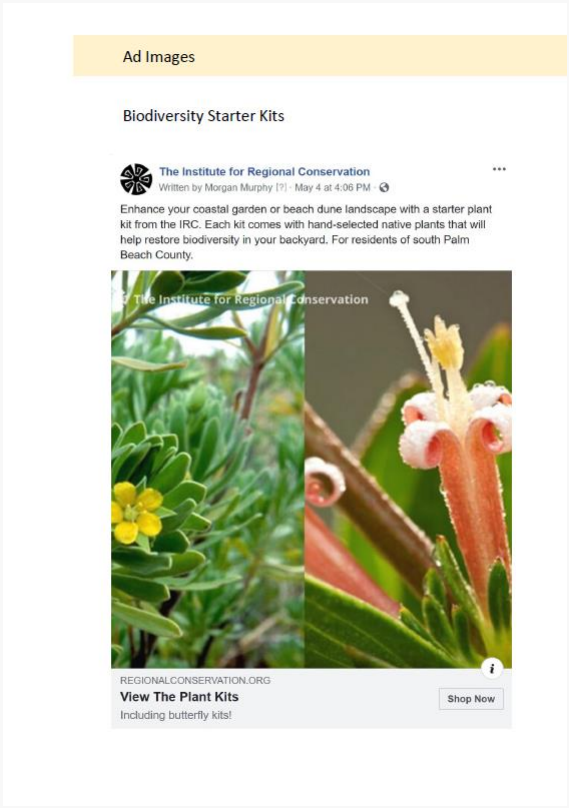
Areas of Outside of Scope

Areas with Poor Engineering

Areas of Active Erosion

RGC Events

Resources for Private Dune Owners



Thanks to Modsnap Design & Marketing

Four Larval Host – 10 Coastal Butterflies

Zebra Heliconian

Cassius Blue

Large Orange Sulphur

Martial Scrub-Hairstreak

Common Buckeye

Gray Hairstreak

Phaon Crescent

White Peacock

Gulf Fritillary

Julia Heliconian


50 species planted
Seeds and plants collected

Discoveries and Recovery

Monthly Conservation Notes

Biodiversity Explosion in Delray Beach

Since 2016 we have been working with dozens of volunteers and collaborators to reduce invasive species and restore native biodiversity at Atlantic Dunes Park (ADP) in Delray Beach. Starting as part of our Green Delray program, Atlantic Dunes Park is now one of the biodiversity hot spots in our Restoring the Gold Coast program. See a list of plant species at the park here.

Work has been slow but steady, but over the last two years native plants have been showing up that have not been recorded there before, or which have not been seen at the park in decades, or which are recruiting and spreading into new areas. It is a remarkable example of the power of natural recovery in response to sound ecological restoration practice - in this case the restoration of coastal strand, the most impacted upland ecosystem in coastal Palm Beach County.

Commelina erecta, or whitemouth dayflower, has recruited en masse in the back dune just east of the seagrape line.

Solanum bahamense, or Bahama nightshade, had been buried under seargrapes, vines, and invasive species. It emerged in 2020.

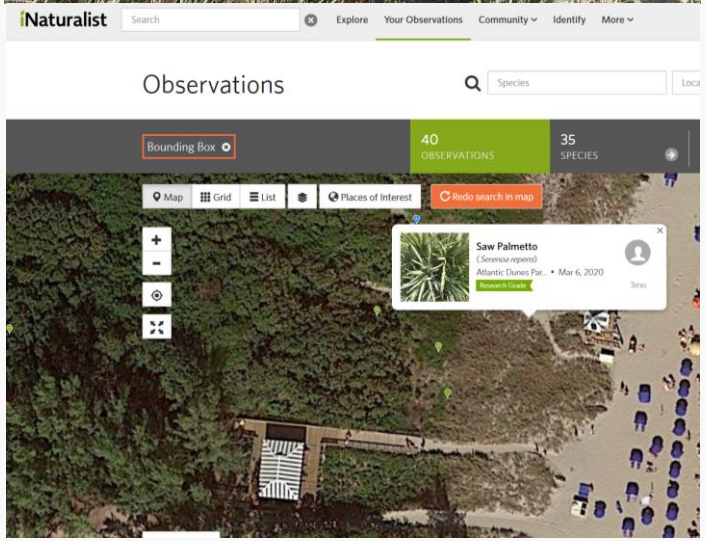
On Friday, I was able to go back to ADP with four ecological restoration practitioner colleagues to follow up on some work that was delayed due to the shutdown. We are not yet ready to hold volunteer events, but we are moving the restoration forward with a professional crew in cooperation with the City of Delray Beach. Once again we found native plants that had not been recorded before, emerging from under what had been a smothering canopy of Brazilian-pepper and seagrape. In celebration of getting back outside and enjoying springtime, I am posting pictures of some of the cool native plants celebrating the restoration at Atlantic Dunes Park. Enjoy!

George Gann
Founder and Executive Director

We recorded *Piriqueta cistoides* subsp. *caroliniana*, or pitted stripeseed, for the first time on coastal dunes in Palm Beach County in 2019. This species is normally found growing in pine forests.

Neptunia pubescens, or tropical puff, is a very rare element of coastal dunes in southern Palm Beach County. We first recorded this at Atlantic Dunes Park on Friday.

This is one of the very few authentic historical populations of *Salvia coccinea*, or tropical sage, in South Florida. Every spring the red flowers barely poke out from the protecting shrubs of the coastal strand.



Restoration design. Bringing coastal strand east by using cues from natural recruitment.

Additional Reference Sites

SER Principle 3: Is informed by native reference ecosystems while considering environmental change

Courtesy: Rob Barron

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

https://www.gardenclub.org/plant-america

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Plant America

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

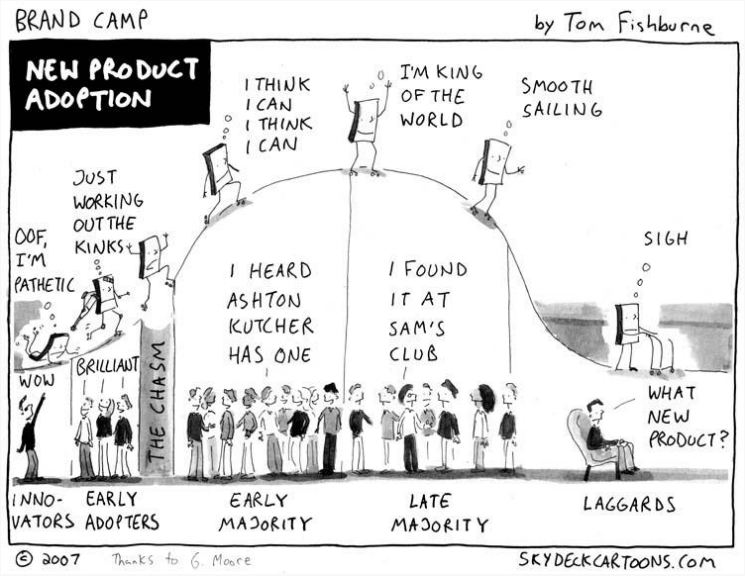
"Each One Plant One"

Expanding the Scope

Trees

	Black ironwood ■	Krugiodendron ferreum
	Blolly, Beeftree ■	Guapira discolor
	Cabbage palm ■	Sabal palmetto
	Common torchwood, Sea torchwood ▲	Amyris elemifera
	Guiana-plum ▲	Drypetes lateriflora
	Gumbo-limbo ■	Bursera simaruba
	Inkwood, Butterbough ▲	Exothea paniculata
	Jamaica caper-tree ■	Quadrella cynophallophora

Play the Long Game



We Need Your Support!

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gann@regionalconservation.org