Restoring the Gold Coast

Biodiversity and Community Engagement in Southern Palm Beach County

Beach Property Owners' Association March 20, 2019





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www.regionalconservation.org
www.ser.org



Chief Conservation Strategist

Acknowledgements

- BPOA Board of Trustees for the invitation and for voting to support our Restoring the Gold Coast Program.
- All the IRC folks, past and present, including our Program Manager and Education & Outreach Coordinator Cara Abbott.
- Photographers, including Roger Hammer, Keith Bradley, Shirley Denton,
 James Johnson and many others.

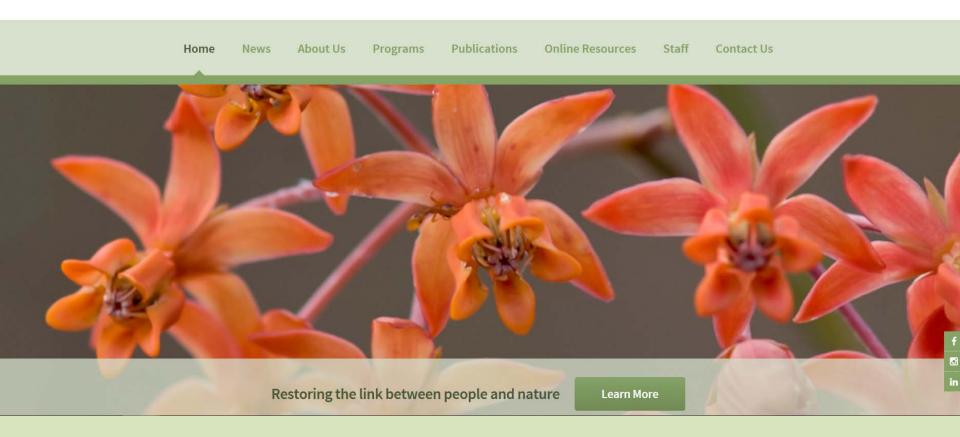
Outline

- o Background on IRC and our mission.
- Conservation context of biodiversity in South Florida.
- Restoring the Gold Coast Program and how it works.
- Questions and Answers.

IRC and its Mission

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Rather than focusing on charismatic animals or plants with narrow global ranges, IRC seeks to protect, restore and manage all biodiversity on a regional basis, and to prevent regional extinctions of rare plants, animals and ecosystems. All conservation is ultimately local. 2019 is our 35th Anniversary Year!

IRC in South Florida

Since 1995, dozens of projects in collaboration with federal, state and local agencies, non-profit organizations and educational institutions:

Floristic and faunistic inventories

Rare species research

Ecological restoration design and implementation

Educational training and workshops

Online Tools and Resources



Some IRC Online Resources







Conservation of rare plants, animals, and ecosystems

Floristic Inventory of the Florida Keys













INTERNATIONAL STANDARDS FOR THE PRACTICE OF ECOLOGICAL RESTORATION - INCLUDING PRINCIPLES AND KEY CONCEPTS

FIRST EDITION: December 2016

Tein McDonald, George D. Gann, Justin Jonson, Kingsley W. Dixon



George Gann (IRC, SER)
Tein McDonald (Society
for Ecological Restoration
Australasia, Australia)













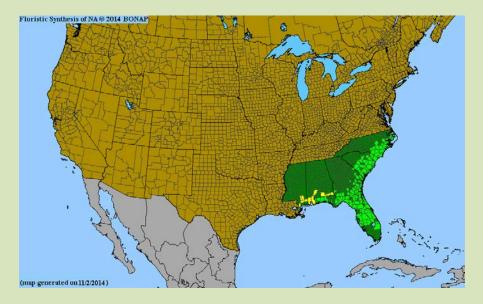




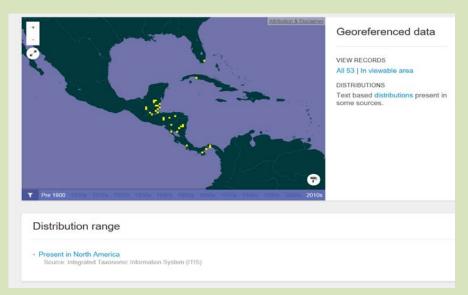
The Conservation Context



South & North Range Limits in South Florida



Gordonia lasianthus (BONAP.org)



Oncidium ensatum (GBIF.org)

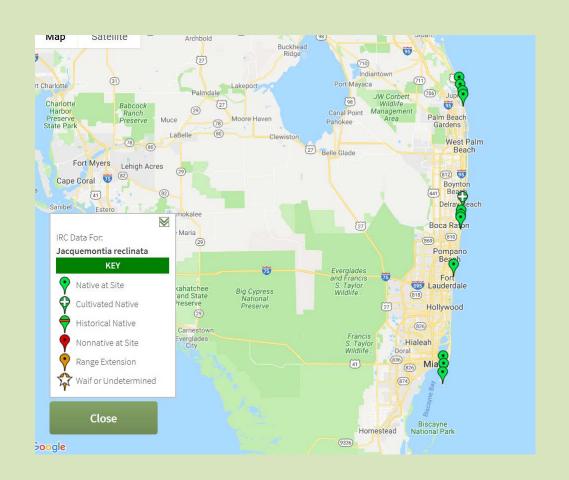


K. Bradley



C. McCartney

South Florida Endemics (probably >50)

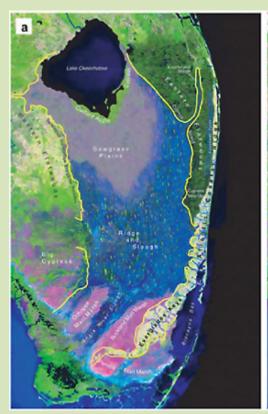


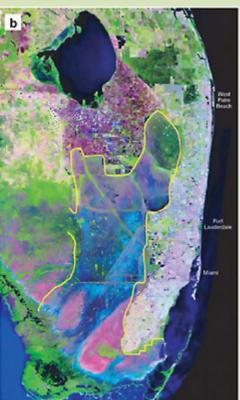


Jacquemontia reclinata
Beach clustervine

>50% of region in conservation; United Nations Convention on Biological Diversity (CBD) 2020 Protected Areas Target = 17%. So everything should be great – but its not.





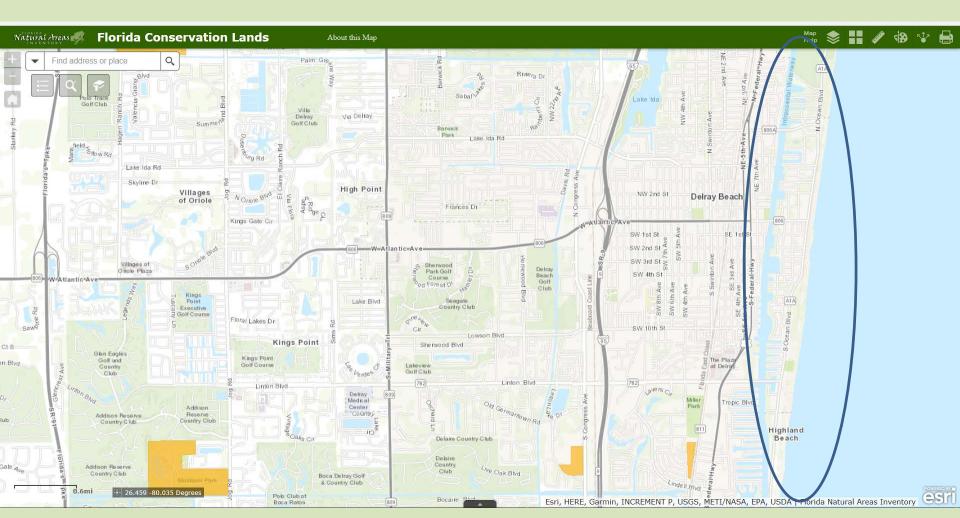




- Everglades transformation
- Coastal development & erosion
- Destruction of critical upland habitat in the interior

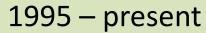


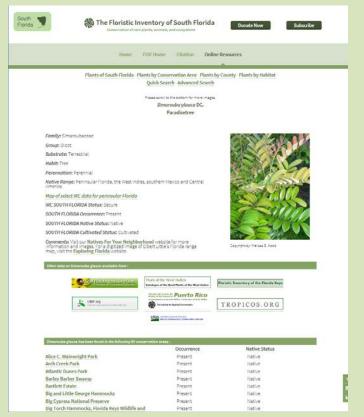
Conservation lands along the Atlantic Coastal Strip are few and scattered, or need to be designated

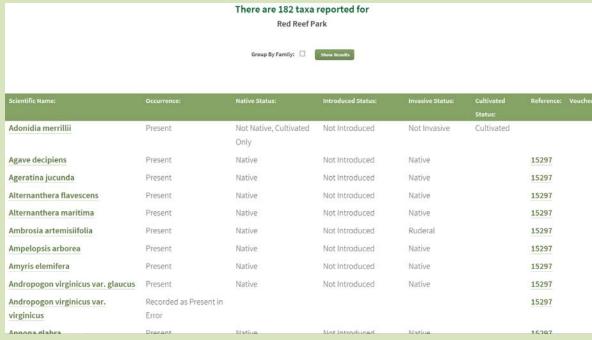


Delray Beach

The Floristic Inventory of South Florida









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?

1990s - Contributed to original management plans for several Palm Beach County Natural Areas, including Delray Oaks, Seacrest Scrub and Jupiter Ridge.

PALM BEACH COUNTY'S NATURAL AREAS

1. NORTH JUPITER FLATWOODS + 3377 (burth St., Jupiter / P / (100)



This 160-acre natural area preserves slash pine habitat. Other plants found sash pine habitat. Other plants found at North Aupitor Flatwoods include saw polmette, giant wild pine, St. John'swort, paragliques researching. largeflower rosegentian and pink sundew. Parking is available at Jupiter Community Park.

2. JACKSON RIVERFRONT PINES



This 3-acre natural area preserves a small portion of the Loxahatchee River shoreline. Even a tiny piece of protected habitat makes a difference – osprey, great habitat makes a difference - osprey, great horned owt, and gopher tortobse have been recorded at this site.

B & 2 A 册 第 A P 🙉

Explore endangered scrub habitat within this 120-acre natura area located in the shadow of the Jupiter Inlet Lighthouse. A boardwalk leads to a covered observation deck overlooking a mangrove wetland restoration area.







DELAWARE SCRUB + 47 N Delowers Blod. Inch.

8 & 4 A A B = A P 🐽



A twenty-minute walk takes visitors through a pine flatwoods forest, over a cypress swamp, across desert-like scrub habitat, and ends at a mangrove overlook. Wildlife observed on the 16-acre site includes

5. LIMESTONE CREEK + 6570 (burth St., Jupiter 8 4 8 A 8 6 8 6 A P ...



This 52-acre natural area protects remnants of Umestone Creek
- a "blackwater" tributary of
the Loxahatchee River. Wetland restoration along the C-18 Canal provides habitat for wading birds, manatees, and schools of fish.

O. CYPRESS CREEK + 10035 Indicatown Rd., Jupiter

A two-mile stretch of NENA's Historic Jupiter - Indiantown Trail passes through the western half of this 2,041-acre natural area. The multi-use trail allows hikers, bikers, and equestrians ess to several wetland overlooks and shade shelters. Additional hiking and equestrian trails are located in the eastern portion of the natural area







7. PINE GLADES



A wetland wonderland, the 6,651-acre Pine Glades Natural Area attracts colorful wading birds including roseate spoonbill, great blue heron, little blue heron, and white this, Restoration projects within the natural area restored water levels and removed Invasivo nonnativo

Wetlands are found throughout this 138-acre natural area. During the rainy season (June - November) up to three feet of water fill the depression marshes. The water disappears during the winter and spring, leaving behind muddy circles on



9. JUPITER RIDGE • 1805. U.S. Highwy I, Japiter



Jupiter Ridge preserves 270 acres of scrub - one of Florida's rarest habitats. Walk ancient sand dunes covered with sand pine trees and pricklypear cactus. The western edge of the natural area meets the Atlantic Intracoastal Waterway where red mangroves

10. LOXAHATCHEE SLOUGH . Poin Book Gardens

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The 12,841-acre Loxahatchee Slough is the county's largest natural area. Cypress domes dot the landscape and depression marshes fill with water during the summer and fall. Whitetailed deer, bobcats, and baid eagles are just a few of the animals found here. A five-mile

stretch of NENA's Bluegill Trail passes through Loxahatchee Stretch of NEVA's abuegin and passes introde. South allowing hikers, bicyclists, and equestrions a grand view of the natural area. Fishing permitted from the banks of the C1B Canal. Parking, cance launch, observation tower, and restrooms are available at Sandhill Crane Access park. 8175 PGA Blvd. in Palm Beach Gardens.

11. HUNGRYLAND SLOUGH 1 to the second of the second



A portion of the Florida Trail Association's Ocean-to-Lake Hiking Trail travels through this 2,967-acre natural area. Much of Hungryland Slough is underwater during the rainy season (June - November). The best time to travel the trail is in winter and

12. SWEETBAY + 12560 Aviation Blvd., Palm Boach Gardens

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This 1,094-acre natural area is adjacent to the North County Airport located off of the Bee Line Hwy. (S.R. 710), one mile west of birds, including snowy egret, black-crowned night-heron, and the endangered wood stork.

13. JUNO DUNES - 14200 S. U.S. Hwy. 1 (occur/front/tred) 14500 S. U.S. Hwy. 1 (west tred), Juno Booch

6 K A # 2 R 2 B A P M 🔏 🧆

Visitors to the 569-acre Juno Dunes Natural Area can travel from the Atlantic Ocean to the Atlantic Intracoastal Waterway The ocean-front tract has a great view of the surrounding area alop an ancient sand dune. The west tract has several miles of trails and floating docks to allow boaters access to the site. Restrooms available at Loggerhead Park.

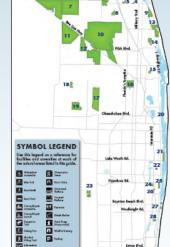




14. FRENCHMAN'S FOREST + 1920 Property Ferre Rd, PR Gerlens 8 M M M M D P 🗯 🧆



The wet, low-lying areas of this 172-acre natural area contain giant leather fern and cypress. The drier ridges are home to slash pine and saw palmetto. More than 5,000 red mangrove seedlings were planted around the tidal pond overlook to restore wetland habitat. Animats observed on the site include great horned owl, red-bellied woodpecker, and eastern gray squirrel.



Natural areas may be temperarily dosed for environmental activities. Check the Department's web site for current information regarding natural area accessibility and public hadities.

15. LAKE PARK SCRUB + Ido Pol-



Creat Florida Steding Stell

The 55-acre Lake Park Scrub Natural Area preserves scrub habitat, one of Florida's most endangered ecosystems. It is estimated that less than 2% of Palm Beach County's historic scrub remains. The natural area is an important refueling stop for migrating birds in the spring and fall.

Che Hoore Ed. 30%

16. WINDING WATERS + West Prin Beech

Roughly half of this 548-acre natural area was cleared for agricultural purposes. The impacted area was restored to shallow-water and deep-water marshes. Birdlife is abundant on this site. Bald eagle, anhinga, green heron, belted kingfisher, and loggerhead shrike are just a few of the birds observed at Winding Waters Natural Area.





The 1,737-acre Pond Cypress Natural Area is home to towering cypress trees covered in airplants such as the giant wild pine. Many areas of the site are underwate during much of the year.

18. ACREAGE PINES . 6405 With Ave. II., Loochetchee 医热力细囊节中 🧀

Acreage Pines Natural Area preserves 124 acres of wetlands and pine lands boardwalk allows visitors an opportunity to watch drogonflies, herons, and ogrets hunt for food in the wetlands. A hiking trail, what the adjacent to Acreage Community Park. A ng trail winds through slash pines and saw palmettos. Keep an eye out for the acrobatic displays of common

19. ROYAL PALM BEACH PINES + Red frim Beech



Wetlands cover more than 40% of this 772-acre site. The natural area attracts many birds, including bald eagle, red-shouldered hawk, and Florida sandhill crane. Other animals sighted include bobcat, southern cricket frog, and eastern box turtle.

20. SOUTH COVE . Flegler Drive, West Pelm Booth 占益左續 M P

Visitors can stroll down a 556-foot boardwalk that extends to one of three mangrove islands within the Lake Worth Lagoon. Six acres of restored wetlands support local fisheries, wading birds. manatees, and sea turities. Motored parking available along Flagler Drive.

21. SNOOK ISLANDS + MH follow M Job West B M B M M B M A P



This 118-acre wetland restoration project created 11 acres of mangroves and 2 acres of syster reets within the Lake Worth Lagoon. Public use facilities include a boardwalk, kayak launch, and floating dock. Restrooms available at Bryant Park.



This 33-acre natural area was part of the now-closed A. G. Holley State Hospital property. The site contains Florida scrub and scrubby flatwoods habitats. Sand pine and saw palmetto are found throughout, along with Florida rosemary, powder-puff lichen,

23. FAST CONSERVATION AREA



Located in the Agricultural Reserve, this 196-acre site is comprised of six separate pieces of land that were once mined and used for tree nurseries. A in the mined section. Cypress strands are scattered throughout the East

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The 39-acre High Ridge Scrub Natural Area protects plants and animals that live in scrub habitat. Many of these species are protected, including the gopher tortoise. Other animals observed on the site include gulf fritillary butterfly, cicada, yellow garden spider, and American kestrel.

25. HYPOLUXO SCRUB . 150 Hypoluxo Rd., Hypoluxo 医利维巴氏的 P

visitors a bird's-eye view of the 98-acre natural area. A pedestrian entrance off of Overlook Rd. allows for easy ac to the center of the site. The dry scrub is home to Florida rosemary, sand live oak, hog plum, six-lined race coachwhip, and brown thrasher

20. ROSEMARY SCRUB + 2901 N. Secrest Blvd. Routon Book

もが紹**用P**



One of our smallest natural areas, the 14-acre Rosemary Scrub is named for a plant related to a familiar cooking herb - the Florida rosemary. Other plants found on the site include netted pawpaw, cabbage palm, nodding pinweed, and several species of native

27. OCEAN RIDGE . Coning St. Ocean Bidge

5.4 = 5.5 组织 6.4





The Ocean Ridge Natural Area is accessible by boat, bicycle and on foot. Red, black, and white mangrove trees dominate the landscape. These trees play an important role in the life cycle of many animal species, including wading birds, fish,

28. SEACREST SCRUB • 3000 S. Seconst Blind., Boymon Boach



The 54-acre Seacrest Scrub Natural Area is a green island of wilderness in the middle of an urban landscape. It is home to the protected gopher toricise. Other animals observed on the site include American redstart, green

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30. YAMATO SCRUB + 701 (lint Hoore Mr. Bora Reton 医复数细胞 P



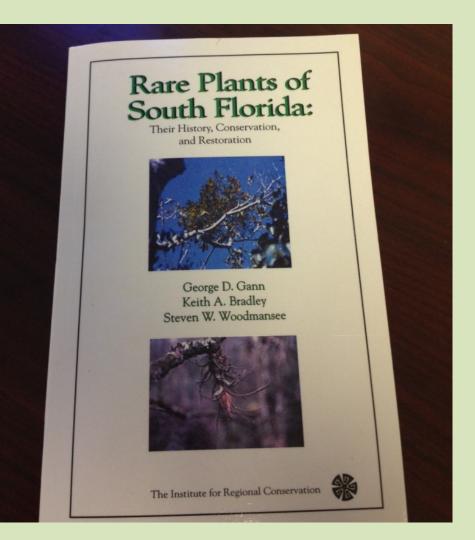
forida scrub habitat covers 63% of Yamato Scrub. Plants found in this 217acre site include sand pine, tarflower, and skyblue lupine. A 10-acre basin marsh located in the northern portion of the natural area contains maldencane sawgrass, and sand cordgrass. More than three miles of traits are available for hiking. Bridges across canals and a tunnel undermeath Clint Moore Rd.



Access to this 79-acre natural area is through the Boca Raton Spanish River Library parking lot. A 12-foot-wide multiuse trail winds along Blue Lake - property once owned by the IBM Corporation. An eight-acre wetland restoration project inside the natural area

provides natural for exprey, mottled duck, black-necked stilt, great blue heron, and white ibis. The natural area is named for a common dragonfly found throughout the woodlands.

Rare Plants of South Florida



- About 1,435 native plant taxa in South Florida.
- About 1/4 either critically imperiled or possibly extirpated (<u>the super rare</u>). Only 1/4 was thought to be secure. About 8% were reported as possibly extirpated.
- The importance of both large and small conservation areas were documented.
- Patterns of rarity were explored (Pteridophytes, epiphytes, tropical plants)



Restoring the Gold Coast

Where Did the Native Biodiversity Go?



Delray Beach, circa 1980

What We Do Well



move sand

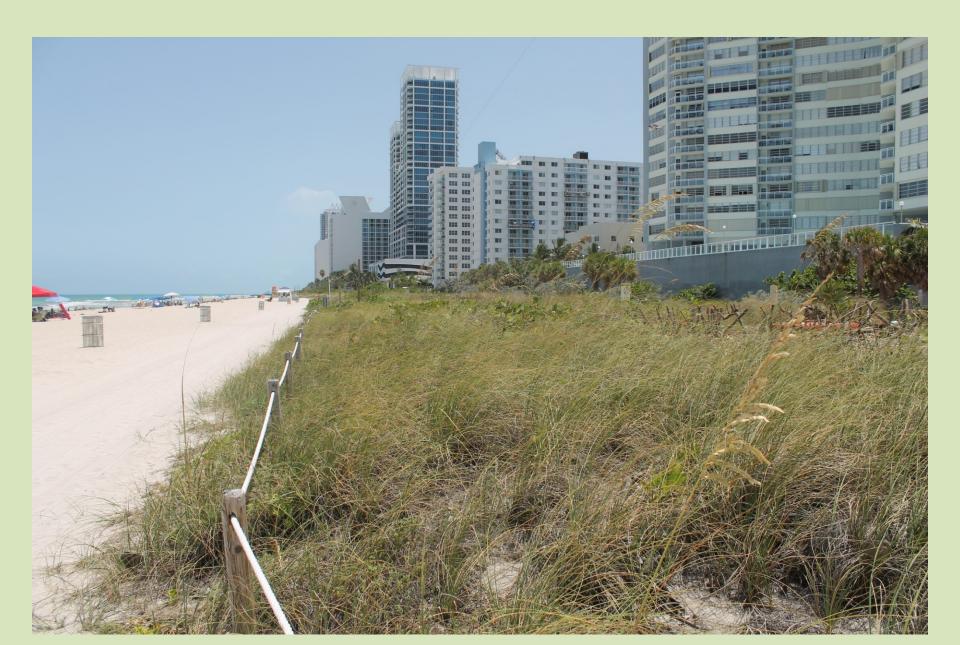


plant sea-oats



recover sea turtles

Success Stories







Initial restorative activities such as single-species revegetation projects can be transformed over time into diverse 4-star to 5-star restoration projects. Left, Bethany Beach, Delaware, USA, ©ER&M/Biohabitats. Right, Delray Beach, Florida, USA ©George D. Gann.

Delray Beach Municipal Beach One of the most biodiverse restored beaches in Florida





2015 Survey and Assessment

183 of 196 historical species recorded (both natives and exotics)

101 native dune species, 7 possible extirpations in City

An additional 75 species within historical range are missing











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 renourished 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 vas. 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.



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East Coast lantana

Lantana depressa vas. floridana

- Miami-Dade to St. Johns County along the east coast (endemic), but nearly extinct due to hybridization with the exotic weedy Lantana camara.
- Recorded for Atlantic Dunes Park (1993) but presumed extirpated there.
 Possibly present in Boca Raton but otherwise gone from South Palm Beach County.



Red mulberry

Morus rubra

- Widespread in south Florida in both inland and coastal locations, but very rare in South Palm Beach County.
- Previously recorded for Atlantic Dune Park (1991) but apparently extirpated there. Present in Boca Raton in maritime hammocks.



Partridge pea

Chamaecrista fasciculata

- Widespread in south Florida in both inland and coastal locations, but perhaps extinct on South Palm Beach County barrier islands.
- Provides food for birds. Larval host plant for ceraunus blue (Hemiargus ceraunus), cloudless sulphur (Phoebis sennae), little yellow (Eurana lisa), and gray hairstreak (Strymon melinus) butterflies.



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Spurred butterfly pea

Centrosema virginianum

- Widespread in south Florida in both inland and coastal locations, but very rare in South Palm Beach County.
- Previously documented at Atlantic Dunes Park (1991) but apparently extirpated.



Forked bluecurls

Trichostema dichotoma

- Widespread in South Florida in both inland and coastal locations, but very rare in coastal South Palm Beach County.
- Previously documented at Atlantic Dunes Park (1991, 1993) but apparently extirpated.



Marshhay cordgrass

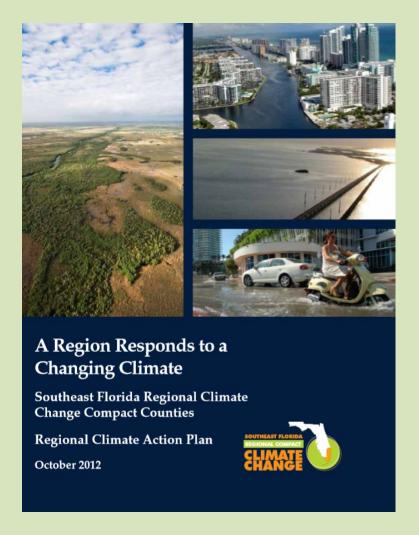
Spartina patens

- Widespread in South Florida along the coast and sometimes planted in dune revegetation projects.
- Previously documented at Atlantic Dune Park (1991) but apparently extirpated there; present at Delray Municipal Beach.



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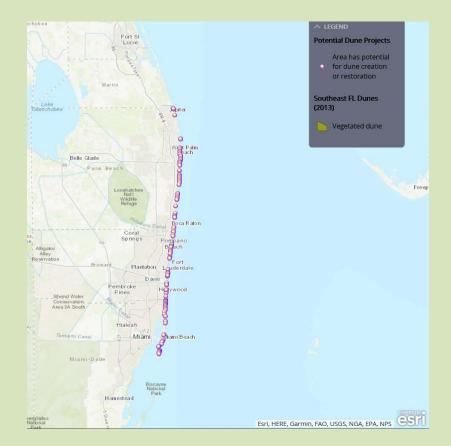
Southeast Florida Regional Climate Change Compact



Shoreline Resilience Working Group

Beach/Dune Goals:

- •A continuous, functional dune system complements every beach from Key Biscayne to Jupiter Inlet.
- •Invasive exotic vegetation covers less than 5% of total vegetated area of the region's dunes.

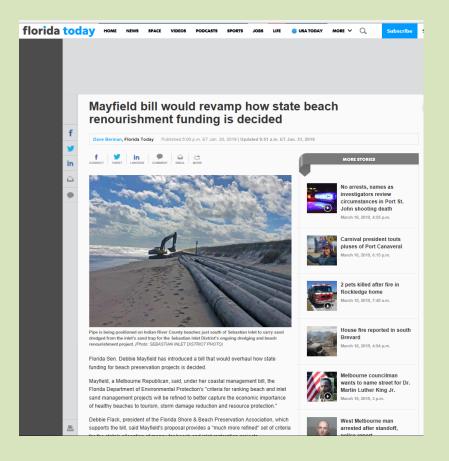


Delray Beach Draft Comprehensive Plan Coastal Element

http://alwaysdelray.com/

COASTAL MANAGEMENT GOALS

COASTAL MANAGEMENT GOALS	
GOAL CME 1	PRESERVE, PROTECT, RESTORE, AND MANAGE CONTINUE TO PRESERVE, PROTECT, RESTORE, AND DILIGENTLY MANAGE THE NATURAL COASTAL ENVIRONMENT TO MAINTAIN OR ENHANCE ITS QUALITY FOR PRESENT AND FUTURE GENERATIONS.
GOAL CME 2	BALANCE BETWEEN BUILT AND NATURAL ENVIRONMENTS ENSURE DEVELOPMENT AND REDEVELOPMENT WITHIN THE COASTAL PLANNING AREA IS COMPATIBLE WITH THE EXISTING CHARACTER AND SENSITIVELY BALANCES THE NEEDS OF THE NATURAL ENVIRONMENT.
GOAL CME 3	PREPARE AND ADAPT FOR THE IMPACTS OF CLIMATE CHANGE AND PERIL OF FLOOD ENHANCE EFFORTS TO PREPARE, ADAPT, MITIGATE, AND MANAGE CLIMATE CHANGE IMPACTS TO ACHIEVE A RESILIENT COMMUNITY THROUGHOUT THE COASTAL PLANNING AREA.
GOAL CME 4	NATURAL DISASTER PREPAREDNESS IN THE COASTAL AREAS ENHANCE EFFORTS TO PREPARE FOR AND MANAGE IMPACT FROM NATURAL DISASTERS
GOAL CME 5	PUBLIC PARTICIPATION AND STRATEGIC PARTNERSHIPS. FOSTER AND PARTICIPATE IN PARTNERSHIPS AND PROGRAMS THAT ADDRESS REGIONAL AND LOCAL COASTAL MANAGEMENT ISSUES, PROVIDE FUNDING AND ENCOURAGE PUBLIC PARTICIPATION IN SUCH PROGRAMS.



"Our beaches are one of Florida's most valuable resources, serving as *critical habitat for species of plants and animals*, attracting visitors and new residents to the state, as well as *providing a line of defense during major storm events*," Florida Senator Debbie Mayfield, Melbourne. *Florida Today*, January 30, 2019

February 2019 Newsletter



Monthly Conservation Notes

Join us for our new monthly Conservation Notes, where we discuss topics important to our work. If you have ideas about topics you would like to see covered, please <u>send us a</u> note!

Diversity is Healthy

A diverse beach is a healthy beach! We have done well in southeastern Florida to renourish our beaches and restore sea turtle populations. Yet we have a long way to go to restore all of the native plant and animal diversity lost from our barrier islands in Dade, Broward and Palm Beach counties. The fact is that diverse dunes are more resilient to sea level rise and climate change. That's why it's critical they are restored based on native ecosystems able to support hundreds of species of native plants and animals, including rare and endemic species! Bringing together all of the stakeholders - landowners, community members, politicians, students - to support a regional conservation vision for the dunes of southeastern Florida is the goal of our new Restoring the Gold Coast program. Stay tuned to this newsletter for more updates!

Preliminary Goals in Southern Palm Beach County (if funded by Impact 100)

- Conduct outreach to all municipalities with property in the project area, and at least 10 nonprofit or community stakeholder groups by August 31, 2019.
- Assess coastal plant diversity along at least 10 miles of coastline from the Broward County line to the Town of South Palm Beach/ Town of Palm Beach line by May 30, 2020.
- Conduct at least 18 restoration/education events and 6 workshops engaging at least 500 children, 50 college students, 100 tourists visiting the SPBC area, and 300 adults and seniors by December 31, 2020.
- Increase depleted populations of at least 25 species of native plants, by December 31, 2020.
- **Engage at least 50 public officials**, coastal resource managers and other influencers about the restoration of coastal biodiversity by December 31, 2020.

Building a Coalition

Letters of Endorsement
Beach Property Owners' Association
City of Delray Beach
City of Boca Raton
Fairchild Tropical Botanic Garden
Florida Native Plant Society, Palm Beach
County Chapter
Keep Palm Beach County Beautiful
Gulf Stream School
Town of Briny Breezes

Funding Committed
Beach Property Owners' Association
Erin L. Deady Law (Green Delray)
New York Life Foundation
Individual Donors

Funding Requested
City of Delray Beach
City of Boca Raton
Palm Beach County Impact 100
New York Life Community Impact







Many Ways of Helping

Great American Beach Cleanup ADP

IRC is taking part in the <u>Great American</u> <u>Cleanup</u> day on April 27th by hosting a volunteer day at Atlantic Dunes Park as part of our Green Delray Program! We will be hosting this day in partnership with <u>Keep Palm Beach County Beautiful</u>, <u>Inc.</u>, <u>Erin L.</u> <u>Deady Law</u> and the City of Delray Beach.

Help restore native biodiversity and clean up our coastline as people across the country take part in the Great American Cleanup. Come prepared to plant native dune species that support the coastal ecosystem, remove weedy invasive species that harm the coastal ecosystem, and pick up trash. We will provide all tools needed for the morning as well as light refreshments. Volunteers of all ages welcome! More info here.



Thank You!



www.regionalconservation.org admin@regionalconservation.org