



The Institute For Regional Conservation Pine Rockland Initiative Program



**An Update on Our Continuing
Pine Rockland Restoration Projects**

By:

Sarah Martin

IRC Pine Rockland Initiative Program Coordinator and Biologist



The Institute for Regional Conservation
Conservation of rare plants, animals, and ecosystems



IRC'S Mission:

A private non-profit organization, The Institute for Regional Conservation (IRC) is dedicated to the protection, restoration, and long-term management of biodiversity on a regional basis, and to the prevention of regional extinctions of rare plants, animals and ecosystems.

IRC's Programs that Support Our Mission:

Regional Conservation Models

Applied Conservation Science

Ecological Restoration and Management

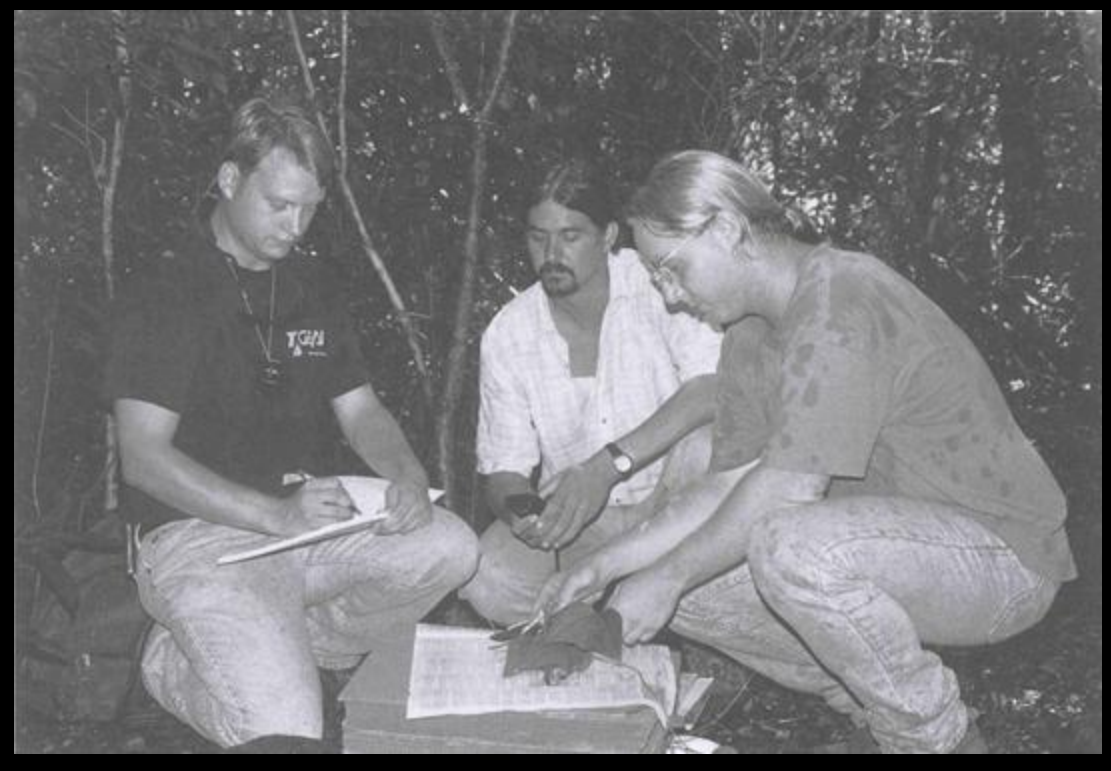
Outreach and Education





Regional Conservation Models

Floristic Databases Online



In 1994, IRC initiated the Floristic Inventory of South Florida to collect baseline data on the status of native plant species.

What was accomplished?

- Assessed status of native species, identified rare species
- Determined effectiveness of existing conservation areas, including small conservation areas, to conserve native plant species
- Identified opportunities to restore rare plants and their habitat

Rare Plants of South Florida:

Their History, Conservation, and Restoration



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




The Institute for Regional Conservation




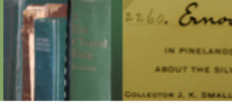


IRC Floristic Inventory of South Florida





The Institute for Regional Conservation
Floristic Inventory of South Florida Database Online



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[Plants of South Florida](#) · [Plants by Conservation Area](#) · [Plants by County](#) · [Plants by Habitat](#)
[Submit Data](#) · [Quick Search](#) · [Advanced Search](#)

Advanced Search the Plants of South Florida

Welcome to the Institute for Regional Conservation's **Advanced Database Search Tool**.
Select your criteria, and hit the **Search** button on the bottom of the page!

Genus:	IRC Status:
All <input type="text"/>	All <input type="text"/>
Family:	FNAI State Status:
All <input type="text"/>	All <input type="text"/>
Group:	FNAI Global Status:
All <input type="text"/>	All <input type="text"/>
Substrate:	FL EPPC Status:
All <input type="text"/>	All <input type="text"/>
Perennation:	State Status:
All <input type="text"/>	All <input type="text"/>
Habit:	Federal Status:
All <input type="text"/>	All <input type="text"/>
Native Status:	
All <input type="text"/>	

Gann, G.D., K.A. Bradley and S.W. Woodmansee, 2001-2013.
The Floristic Inventory of South Florida Database Online.
The Institute for Regional Conservation, Delray Beach, Florida USA.



The Institute for Regional Conservation
Conservation of rare plants, animals, and ecosystems



Ipomoea microdactyla Griseb.
Man-in-the-ground, 'Bejuco colorado'

[Plants of South Florida](#) · [Plants by Conservation Area](#) · [Plants by County](#) · [Plants by Habitat](#)
[Submit Data](#) · [Quick Search](#) · [Advanced Search](#)

Family: Convolvulaceae

Group: Dicot

Substrate: Terrestrial

Habit: Vine

Perennation: Perennial

Native Range: Scattered in South Florida (Miami-Dade County) and the West Indies (Cuba, Bahamas, Puerto Rico [Mona Island only]).

Nature Serve Global Status: Imperiled

State of Florida Status: Endangered

FNAI State Status: S1S2

SOUTH FLORIDA Occurrence: Present

SOUTH FLORIDA Native Status: Native

IRC SOUTH FLORIDA Status: Imperiled

SOUTH FLORIDA Cultivated Status: Cultivated

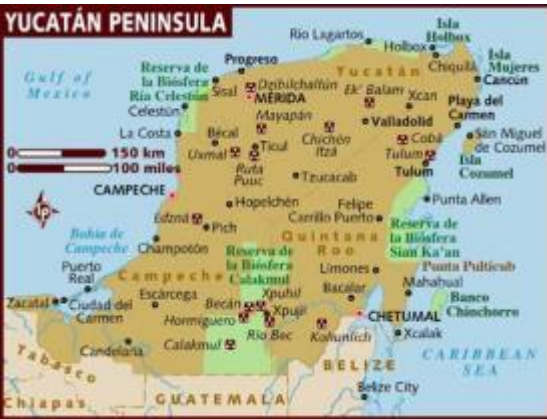
Comments: Visit our [Natives For Your Neighborhood](#) website for more information and images.





Floristic Database Expansion: *Plantas del Mayab*

Jorge Carlos Trejo Torres, Ph.D., IRC's newest research associate, launched the website "[Las Plantas del Mayab](http://PlantasdelMayab.com)."



karsensis@yahoo.com.mx

Mayab is a region of the Yucatán peninsula in Mexico. The website provides information about native and naturalized plants in the region, provides lists of plants for specific uses, and links to native plant nurseries and other informational sites.

The screenshot shows the website's header with the logo and navigation menu. The main content area features a '¡BIENVENIDO!' section with a green search button labeled 'BuscaPLANTAS'. Below this is a '¿Qué está pasando?' section with sub-sections for 'PRÓXIMOS EVENTOS', 'PRÓXIMOS AVANCES', 'Publicaciones Recientes', and 'LISTAS PARA USARSE'. A 'QUIENES SOMOS' section follows, detailing the project's goals and listing the research team and volunteers.

PlantasdelMayab.com
Plantas para todos

The Institute for Regional Conservation
Programa para la Península de Yucatán

Inicio La Flora del Mayab BuscaPLANTAS QUÉ HACER Listas para USARSE BiblioFLORA

¡BIENVENIDO!

El portal está dirigido a todos los aficionados y expertos de las plantas del Mayab. **Nuestro objetivo** es comunicar información botánica, así como de sitios, grupos y actividades en torno a la flora. El portal es una conexión entre los usuarios, muchas veces no versados en la botánica, y fuentes de información dispersas, especializadas o complicadas.

Usando cualquier nombre común o científico, nuestro BuscaPLANTAS te lleva al nombre científico universalmente válido. Para cada nombre válido te proveemos la liga a la tabulosa base mundial de plantas del Jardín Botánico de Missouri, así como a la Flora Digital de la Península de Yucatán. Para muchas especies hay ligas a la Flora de Nicaragua, la Flora de la Reserva de Xasil Kuic y a Plantas Nativas para tu Vecindario (sur de Florida). En estas ligas verás fotos y/o descripciones de las plantas, sin embargo, algunas de estas bases están diseñadas para conocedores, y algunas están en inglés.

El portal es útil para amantes de la naturaleza, constructores, desarrolladores, consultores ambientales, administradores y manejadores de recursos naturales, comerciantes, agentes de aduana, guías turísticos, médicos y enfermeros, artistas, literatos, educadores, estudiantes y hasta para científicos!

El portal crecerá en los próximos meses y años por lo que te invitamos a navegar sus secciones de cuando en cuando. La información de cada especie aumentará e incluirá fotografías propias de las plantas y sus ambientes. Seguiremos agregando ligas a otros portales interesantes. Si deseas colaborar con información o imágenes, ser voluntario o auspiciar el proyecto, contáctanos a: correo@plantasdelmayab.com

QUIENES SOMOS

PlantasdelMayab.com es construido por un grupo de expertos en botánica, conservación e informática. Es un proyecto de The Institute for Regional Conservation (IRC), con base en Delray Beach, Florida. Visítanos en: www.regionalconservation.org. El Programa para la Península de Yucatán del IRC (ICR-Y) tiene su base en Mérida, Yucatán.

Responsables (<http://regionalconservation.org/ircs/Staff.asp>):

- Jorge Carlos Trejo Torres, Research Associate
- George D. Gann, Chief Conservation Strategist
- Lindsey R. Nieratka, Program Administrator
- Javier Rodríguez Rodríguez, Webmaster (MexicoEnFotos.com)

Voluntarios:

- Karla Vázquez Zapata (Licenciatura en Biología, Campus COBA - UADY)
- Ingrid Bodi Jena
- Getmy Estrella Aké

Colaboradores:



Floristic Database Expansion In the Works...

Floristic Inventory of the Bahama Archipelago Online

IRC Chief Conservation Strategist George Gann is currently collaborating with other regional botanists working on a Floristic Inventory of the Bahama Archipelago Online, and we hope to have a public site up by year's end.

We need financial support for this endeavor...

Contact George Gann if interested!



gann@regionalconservation.org


The Institute for Regional Conservation
Florida Secretary of the
Florida Archipelago Database Online
November 15, 2012

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[Flora of the Bahama Archipelago - Flora by Habitat](#)
[Quick Search - Advanced Search - Quick Search Synonyms](#)
Please scroll to the bottom for more images



Floristic Inventory of the Bahama Archipelago Database Online
Adiantum nigricollicum Willd.
Dark Maidenhair Fern

Family: Pteridaceae
Group: Pteridophyta
Habit: Herb
Perennation: Perennial
Substrate: Lithophyte
Native Status: Native
Native Range: The West Indies and [South Florida](#)
Common: Reported in 1920 by Britton & Killip for sinkholes in the northwestern Commonwealth (New Providence, Eleuthera). Reported by Correll & Correll (1982: 19-21) for sinkholes in coppices in the northwestern and central Commonwealth (regions 8-9).





Copyright: George D. Gann
In Habitat, Everglades National Park, Florida, 2012

Other data on *Adiantum nigricollicum* available from:

Adiantum nigricollicum has been reported for the following 2 habitats in the Bahama Archipelago:
[Cave](#)
[Sinkhole](#)

All Images:



IRC Natives For Your Neighborhood



Natives For Your Neighborhood
A program of The Institute for Regional Conservation

an innovative conservation resource for South Florida

home plant list habitats wildlife ^{BETA} map IRC home

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A resource to help change what is now a backyard hobby for a few into a powerful conservation tool of many.

Here you can find out how to turn simple gardening into habitat restoration by using plants that are native to your specific area. The purpose of this site is to provide you with the information you need to do just that. By planting native plants and recreating natural habitats that are unique to your area, you are making a valuable contribution to the conservation and restoration of South Florida's natural heritage!

Please start by entering a 5-digit South Florida zip code here

Find out about the unique plants, habitats, and wildlife in your area.

If you would like to learn more about native plants and the importance of conservation, or simply learn [how to use this website](#), please see the topics at right.

Map of South Florida

Below is a map of South Florida, defined here as the counties from Lake Okeachobee southward. Information for these counties is provided on this website. You may choose a county by clicking on the map, and a list of cultivated native plants that occur throughout that county is provided. However, if you'd like information specific to your home or project site, please enter a 5-digit zip code above and detailed data on the habitats and plants found there may be viewed.

Enter a zip code:

OR

Choose a county:

OR

Search for a plant in the Natives For Your Neighborhood database:

Common Names

OR

Search for an animal in the Natives For Your Neighborhood database:

Common Names

Find Clear

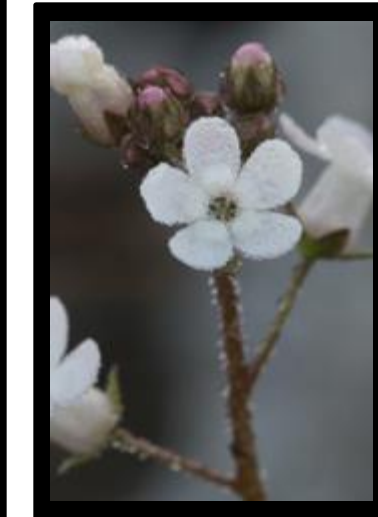
About natives for your neighborhood

What are native plants?

Frequently asked questions

Resources Links

[Water Wise Landscaping](#)





Why Natives For Your Neighborhood?

Natives For Your Neighborhood
A program of The Institute for Regional Conservation

an innovative conservation resource for South Florida

home plant list habitats wildlife **DATA** map IRC home

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A resource to help change what is now a backyard hobby for a few into a powerful conservation tool of many.

Here you can find out how to turn simple gardening into habitat restoration by using plants that are native to your specific area. The purpose of this site is to provide you with the information you need to do just that. By planting native plants and recreating natural habitats that are unique to your area, you are making a valuable contribution to the conservation and restoration of South Florida's natural heritage!

Please start by entering a 3-digit South Florida zip code here

Find out about the unique plants, habitats, and wildlife in your area.

If you would like to learn more about native plants and the importance of conservation, or simply learn [how to use this website](#), please see the topics at right.

Map of South Florida

Below is a map of South Florida, defined here as the counties from Lake Okeechobee southward. Information for these counties is provided on this website. You may choose a county by clicking on the map, and a list of cultivated native plants that occur throughout that county is provided. However, if you'd like information specific to your home or project site, please enter a 3-digit zip code above and detailed data on the habitats and plants found there may be viewed.

MARTIN
GLADES
CHARLOTTE
LEE HENDRY PALM BEACH
COLLIER BROWARD
MIAMI-DADE
MONROE (Keys)

Enter a zip code:
OR
Choose a county:
OR
Search for a plant in the Natives For Your Neighborhood database:
Common Names
OR
Search for an animal in the Natives For Your Neighborhood database:
Common Names
Find Clear

About natives for your neighborhood

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[Water Wise Landscaping](#)
[Florida Friendly Landscapes](#)
[Native Plant Certification](#)
[Find your Native Plant Society Chapter](#)

- Provide additional habitat and support for native species outside protected areas.
- Empowers individuals to take action in local conservation.
- Creates urban habitat, connectivity, and promotes resilience to change.

The goals of NFYN are...



- Increase the success of native plant gardening and habitat restoration projects.
- Decrease problems caused by “native” plants escaping from cultivation outside of their historical ranges.
- Maximize the conservation benefits of native plantings by increasing connectivity of conservation areas native plant populations.
- Provide appropriate sources of food for native wildlife.
- Create a sense of place and an appreciation for each local area’s native plant heritage.

Zip Code 33483 search for Native Plants, Habitats and Wildlife

This is a long narrow zip code area in eastern Delray Beach and the town of Gulfstream on the island of Palm Beach in Palm Beach County. Information on strictly coastal or inland plants can be found by viewing habitat data for this zip code area.

Native Plants

- Click below to obtain a list of native plants that are recommended for 33483, 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 33483 !](#)

[Advance search for plants](#)

Habitats

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

- Click below to view a list of some native habitats for 33483.

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

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

[Get your list of habitats for 33483 !](#)

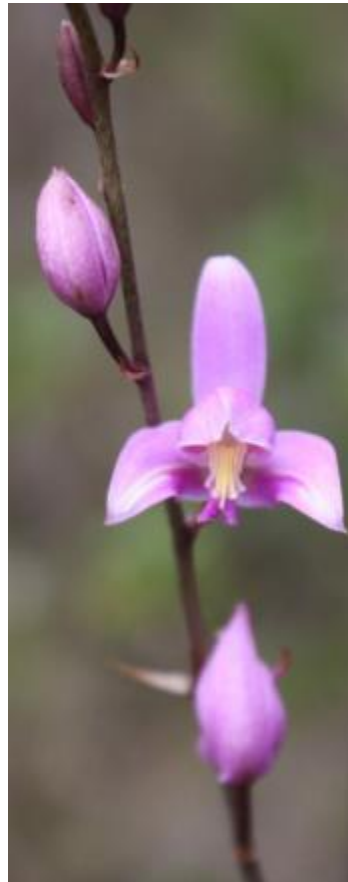
Wildlife

- 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 33483 !](#)

Search by zip code and...

Retrieve lists of plants, habitats, and wildlife native to your area.



Natives for Your Neighborhood plant list

Plants in Zip Code 33483

Below is a list of the cultivated native plants for this zip code. These plants, all within their natural ranges in this geographic area, are appropriate for use in landscaping here. By planting these native species, you will not only create a low-maintenance landscape to enjoy, but you will also contribute to the conservation and restoration of South Florida's environment. (For more on this, [click here](#).)

To take gardening with natives a step further, you can learn about the native plant habitats that are appropriate for your area (click the back button to view a list of those habitats). 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.

To view detailed information on the horticultural requirements and landscaping uses of the plants as well as photos for most species, click on any plant name.

Sort By: Scientific Name Common Name

Group By Plant Form:

[PRINTER FRIENDLY VERSION](#)

- Widely cultivated
- Cultivated at native plant nurseries

Common Name	Scientific Name
American beautyberry <input checked="" type="checkbox"/>	Callicarpa americana
American blueberry	Baccharis americana
Arrowfeather threaveen	Aristida purpurascens
Bell-moss	Tillandsia recurvata
Banded wild-pine, Twisted airplant	Tillandsia flexuosa
Button-hemp, False nettle, Bog hemp	Boehmeria cylindrica
Cabbage palm <input checked="" type="checkbox"/>	Sabal palmetto
Camphorweed	Heterotheca subaureolaris
Candyweed, Show milkwort	Polygala violacea
Climbing hempweed, Climbing hamamelis	Miconia scandens
Coastal plain hawkweed	Hieracium megarcephalon
Coastal Plain willow <input checked="" type="checkbox"/>	Salix caroliniana

Other ways to search

- Advanced search forms let you find exactly what you are looking for.
 - A wildlife attracting shrub that will grow in light shade and has conspicuous fruits?

Advanced Search for Plants

Zip Code:

Name (common or scientific):

Light Preference:

Soil:

Form:

Drought Tolerance:

Fruit:

Wildlife Attractant:

Flowers Significant:

Sort By:

Widely cultivated
 Cultivated at native plant nurseries

Common Name	Scientific Name
American beautyberry <input type="checkbox"/>	Callicarpa americana
Cabbage palm <input type="checkbox"/>	Sabal palmetto
Coastal Plain willow <input type="checkbox"/>	Salix caroliniana
Common snowberry, Milkberry <input type="checkbox"/>	Chiococca alba
Coralbean, Cherokee bean <input type="checkbox"/>	Erythrina herbacea
Elderberry, American elder <input type="checkbox"/>	Sambucus canadensis
Gopher-apple <input type="checkbox"/>	Licania michauxii
Marlberry <input type="checkbox"/>	Ardisia escallonioides
Saw palmetto <input type="checkbox"/>	Serenoa repens
Shiny-leaved wild coffee <input type="checkbox"/>	Psychotria nervosa
Shortleaf wild coffee <input type="checkbox"/>	Psychotria sulzneri
Twinberry, Simpson's stopper <input type="checkbox"/>	Myrcianthes fragrans
Wax myrtle, Southern Bayberry <input type="checkbox"/>	Myrica cerifera
White stopper <input type="checkbox"/>	Eugenia axillaris



American Beautyberry



Coralbean

Wildlife and Habitat

Habitats in Zip Code 33134

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.

Bayhead [Learn More](#) [Plant List](#)

Marl Prairie [Learn More](#) [Plant List](#)

Pine Rockland



[Learn More](#) [Plant List](#)

Rockland Hammock [Learn More](#) [Plant List](#)

Wildlife in Zip Code 33483

Below is a list of animals that may be observed in this zip code. By planting native species, you will not only create a low-maintenance landscape to enjoy, but you will also create habitat for these wildlife species.

Sort By: [Scientific Name](#) [Common Name](#)

[PRINTER FRIENDLY VERSION](#)

Common Name	Scientific Name
Butterflies	
Barred Yellow	Eurema daira
Black Swallowtail	Papilio polyxenes
Brazilian Skipper, Canna skipper	Calpodia ethlius
Carolina Satyr	Hermeuptychia sosybius
Cassius Blue	Leptotes cassius
Ceraunus Blue	Hemiarqus ceraunus
Clouded Skipper	Lerema accius
Cloudless Sulphur	Phoebis sennae
Common Buckeye	Junonia coenia
Giant Swallowtail	Papilio cresphontes
Gray Hairstreak	Strymon melinus



Ceraunus Blue on *Galactia smallii*



Screech owl in nest box in a restored Pine Rockland



Restored Rockland Hammock in Miami-Dade County yard.



Palamedes Swallowtail on *Liatris*



Natives For Your Neighborhood: Statewide Expansion In The Works



Natives For Your Neighborhood
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an innovative conservation resource for South Florida

home plant list habitats wildlife ^{BETA} map IRC home

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FLORIDA NATIVE PLANT SOCIETY

U.S. FISH & WILDLIFE SERVICE

Natives for Your Neighborhood plant list

To find information on native plants that are recommended for your area, please enter your zip code, or a county name, in one of the boxes to the right.

Below is a complete listing of the native cultivated plants included on the Natives For Your Neighborhood website. This site contains plants from all over South Florida, and by entering in a zip code or county, you can find out which of these plants are right for your area!

The list below is not intended as a guide on plants that are recommended for any specific area; it is intended to show all the plants included in this site.*

*The native plants on this site were chosen according to a combination of criteria, including their availability, conservation status, and other factors. For more information on these criteria, please see [FAQs \(Frequently Asked Questions\)](#).

Sort By: Scientific Name Common Name

Group By Plant Form:

Widely cultivated
 Cultivated at native plant nurseries

Common Name	Scientific Name
Alligatorflag, Fireflag <input checked="" type="checkbox"/>	Thalia geniculata
Alligatorlily	Hymenocallis palmeri
American beautyberry <input type="checkbox"/>	Callicarpa americana
American bluehearts	Buchnera americana

Enter a zip code:

OR
Choose a county:

OR
Search for a plant in the Natives For Your Neighborhood database:

Common Names
OR
Search for an animal in the Natives For Your Neighborhood database:

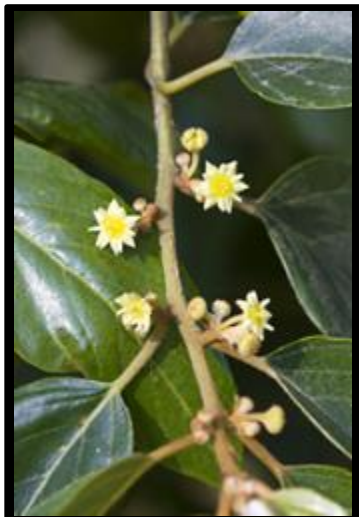
Common Names

About natives for your neighborhood

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[Water Wise Landscaping](#)





Natives For Your Neighborhood: Range Maps In The Works

The image displays a Google Maps interface with a range map overlay for *Ilex krugiana*. The map covers the Miami area, including neighborhoods like Fountainebleau, Coral Gables, and Homestead. A callout box is positioned over the map, containing the following information:

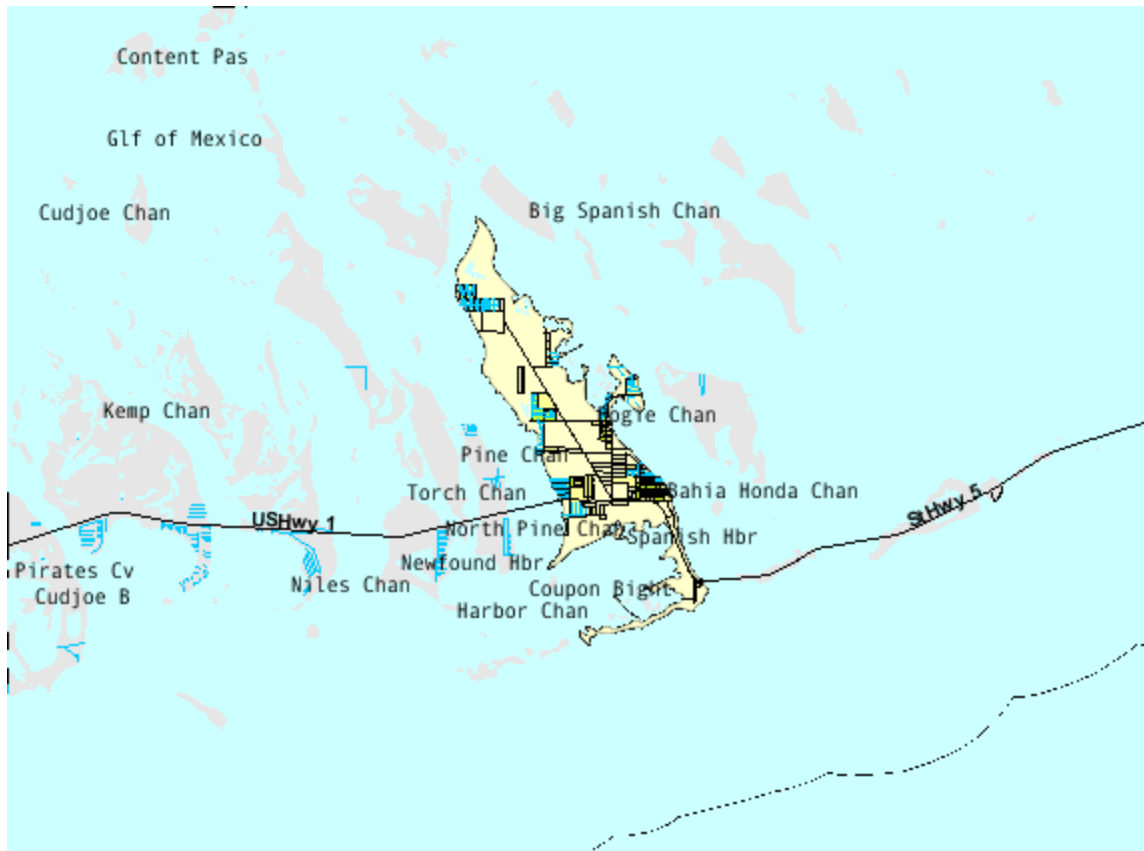
- Text: *Ilex krugiana*
- Number: 1
- Date: Feb 22 2013

An inset image on the left side of the map shows a close-up of the plant's leaves, which are dark green and glossy. The map interface includes standard navigation controls like a compass, a person icon, and a zoom slider. In the bottom right corner, it says "Map data ©2013 Google - Terms of Use Report a map error".



IRC Applied Conservation Science: Demography Study on Big Pine Key

Study on life history traits of *Chamaesyce deltoidea*, *Chamaesyce garberi* and *Linum arenicola* on Big Pine Key



IRC Chief Executive Officer
Craig van der Heiden, P.h.D.
craig@regionalconservation.org



IRC Applied Conservation Science: Demography Study on Big Pine Key



Chamaesyce deltoidea subsp. *serpyllum* seedling emerging through pine needles



IRC Applied Conservation Science: Demography Study on Big Pine Key



1*1 m² quadrat divided into 10 cm squares to record individual *Chamaesyce deltoidea* subsp. *serpyllum* growth over time.



IRC Applied Conservation Science: Demography Study on Big Pine Key



Measuring individual *Chamaesyce deltoidea* subsp. *serpyllum* in the 10*10 cm squares.
Recorded number of flowers and survivability.



IRC Applied Conservation Science: Demography Study on Big Pine Key



Chamaesyce deltoidea subsp. *serpyllum*



IRC Applied Conservation Science: Demography Study on Big Pine Key



Linum arenicola tagged to record individual plants and monitor life history traits and survivability. Notice deer browse and plant sending out new shoots.





IRC Applied Conservation Science: Demography Study on Big Pine Key



Tagged *Linum arenicola* seedling



IRC Applied Conservation Science: Demography Study on Big Pine Key



Chamaesyce garberi



IRC Applied Conservation Science: Homestead Air Reserve Base Rare Plant Survey



Small's milkpea, *Galactia smallii*



Sand flax, *Linum arenicola*



IRC Applied Conservation Science: Homestead Air Reserve Base Rare Plant Survey



A total of 56 populations of *Galactia smallii* were mapped and quantified. *Galactia smallii* was found in varying quantities throughout the base with the lowest average density of 0.008/ m² and highest density of 3.12/ m². The average density is 0.379 ± 0.051 (SE)/m². The total population on HARB is estimated at $404,779 \pm 7,442$ (SD) plants.





IRC Applied Conservation Science: Homestead Air Reserve Base Rare Plant Survey

Fewer populations of *Linum arenicola* were found on HARB. Nineteen populations were found with varying average densities; the lowest density $0.006/ \text{m}^2$ and the highest $2/ \text{m}^2$. The average density of sand flax is 0.213 ± 0.058 (SE)/ m^2 . The population estimate for *Linum arenicola* on HARB is estimated at $31,399 \pm 2271$ (SD) plants.



Photo By: James Johnson



IRC Applied Conservation Science: Homestead Air Reserve Base Rare Plant Survey

During the Surveys:

-2 Federal Trust Species, *Galactia smallii* and *Linum arenicola* were confirmed present.

-25 state listed species were confirmed present.



Scientific Name	Common Name	State List
<i>Angadenia berteroi</i>	Pineland golden trumpet	Threatened
<i>Bletia purpurea</i>	Pinepink	Threatened
<i>Byrsonima lucida</i>	Locust berry	Threatened
<i>Chaptalia albicans</i>	White sunbonnets	Threatened
<i>Coccothrinax argentata</i>	Florida silver palm	Threatened
<i>Crossopetalum ilicifolium</i>	Quail berry	Threatened
<i>Cynanchum blodgettii</i>	Blodgett's swallowwort	Threatened
<i>Galactia Smallii</i>	Small's milkpea	Endangered
<i>Ipomoea microdactyla</i>	Man-in-the-ground	Endangered
<i>Jacquemontia curtisii</i>	Pineland cluster vine	Threatened
<i>Lantana depressa</i>	Rockland shrub verbena	Endangered
<i>Linum arenicola</i>	Sand flax	Endangered
<i>Melanthera parvifolia</i>	Pineland black anthers	Threatened
<i>Odontosoria clavata</i>	Wedgelet fern	Endangered
<i>Phyla stoechadifolia</i>	Southern fogfruit	Endangered
<i>Psidium longipes</i>	Long stalked stopper	Threatened
<i>Pteris bahamensis</i>	Bahama ladder brake	Threatened
<i>Rhynchosia parvifolia</i>	Small-leaf snoutbean	Threatened
<i>Scutellaria havanensis</i>	Havana scullcap	Endangered
<i>Selaginella armata var. eatonii</i>	Eaton's spike-moss	Endangered
<i>Senna mexicana var. chapmanii</i>	Bahama senna	Threatened
<i>Smilax havanensis</i>	Everglades greenbrier	Threatened
<i>Spermacoce terminalis</i>	Everglades false buttonweed	Threatened
<i>Stylosanthes calcicola</i>	Everglades key pencilflower	Endangered
<i>Tetrazygia bicolor</i>	West Indian-lilac	Threatened



IRC Applied Conservation Science: Homestead Air Reserve Base Special Operations Command Rare Plant Survey and Habitat Restoration

- 179 plant species were found on the SOC south management areas
- 41 of which are not considered native to south Florida
- 16 species listed as a category I or II invasive by FLEPPC
- 2 Federal Trust Species, *Galactia smallii* and *Linum arenicola* are present
- 24 species state listed species found present





IRC Applied Conservation Science:
Homestead Air Reserve Base
Special Operations Command
Rare Plant Survey and Habitat Restoration





IRC Ecological Restoration and Management: Homestead Air Reserve Base Special Operations Command

Rare Plant Survey and Pine Rockland Habitat Restoration

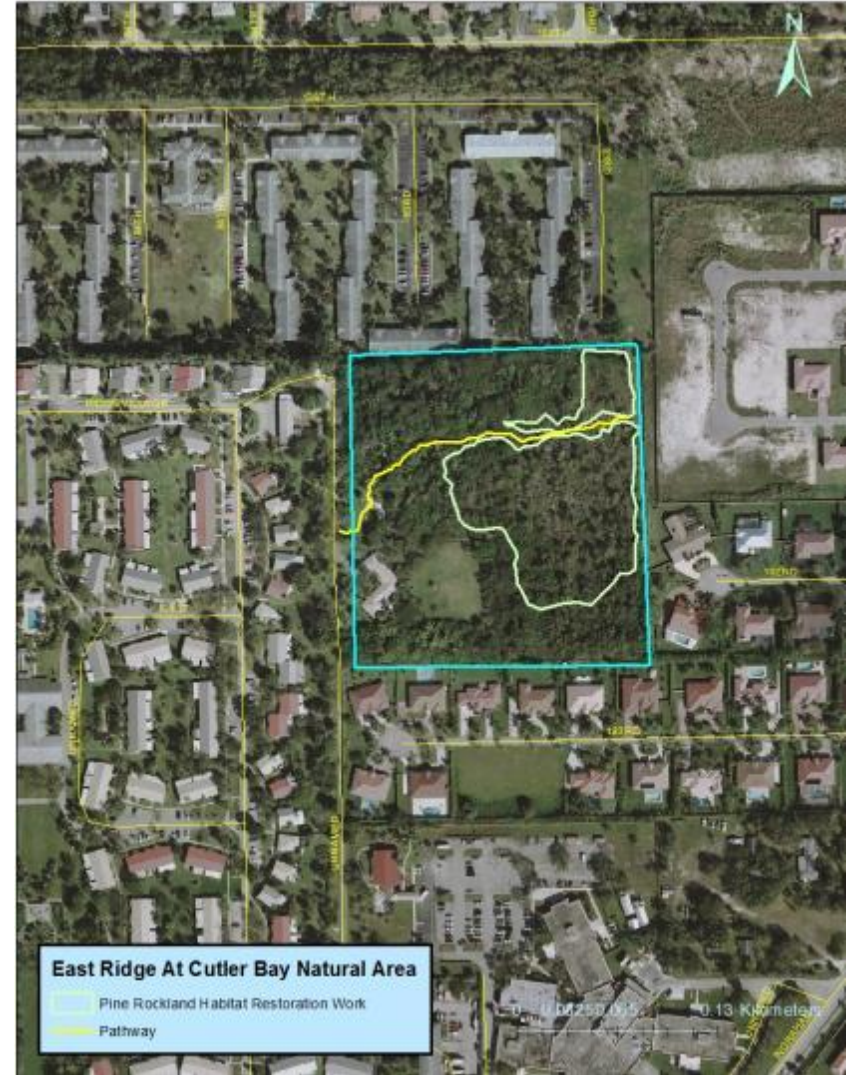
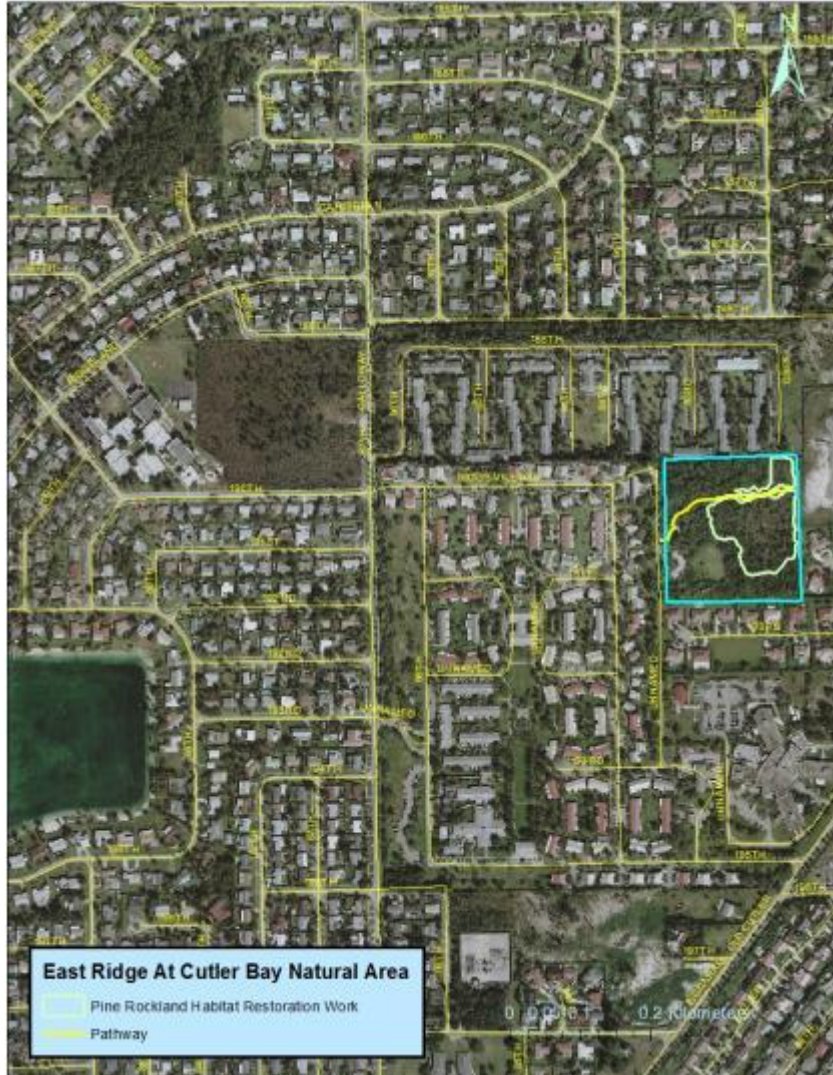


--Estimates prior to the removal of exotic species in Management Area 1 for Small's milkpea were 0.84 ± 0.15 (SE)/m², and total estimates for sand flax were 0.49 ± 0.23 (SE)/m².

-Estimates prior to the removal of exotic species in Management Area 2 for Small's milkpea were 0.47 ± 0.12 (SE)/m², and total estimates for sand flax were 0.40 ± 0.1 (SE)/m². "



IRC Ecological Restoration and Management: East Ridge at Cutler Bay Retirement Community Pine Rockland





East Ridge at Cutler Bay Pine Rockland

- Natural Area named “Larch Hammock” is 10 Acres of pine rockland and disturbed habitat
- In close proximity to Ned Glen Pine Rockland Preserve
- In process of uncovering pineland history (we need help with this, let us know if you have any historical info for the site!)
- Was on the MDC EEL property list at one time
- No prior management history
- Some previous wildfire history



Many rare species documented in pineland previously (2005-2006), including Small’s milkwort, *Polygala smallii*



East Ridge at Cutler Bay Pine Rockland

How the project started

Jennifer Possley

Fairchild Tropical Botanic Garden



Nancy Fehr

East Ridge at Cutler Bay



Sarah Martin

Institute For Regional Conservation





East Ridge Pine Rockland Habitat Restoration and Management Goals

-Eradicate Invasive Species-

Plants such as Brazilian-pepper and Burmared were treated.



-Reintroduce the natural fire cycle-

The East Ridge pine rockland has experienced wildfire events, but the pineland is in need of a prescribed fire regime. Hardwood thinning may be an option in the meantime.



-Native Planting-

Areas of may be planted to accelerate the restoration process.

-Long term management and planning- For successful habitat restoration results, long term management must be planned and implemented, or habitat **will return** to pre-treatment levels. IRC is working with East Ridge to incorporate pine rockland management into their yearly budget.





Habitat Restoration Progress

East Ridge at Cutler Bay Pine Rockland

- Initial Treatment of Invasive Species
- Species list created
- Installation of 2 nest boxes
- Documentation of restoration work completed



Initial Treatment of Invasive Species

- Initial Assessment of viable habitat
- Invasive Burmared (*Neyraudia reynaudiana*) was brush-cut and foliar treated
- Invasive trees such as earleaf acacia (*Acacia auriculiformis*) and Brazilian-pepper (*Schinus terebinthifolius*) teated in-place
- Invaded area adjacent treated to reduce seed source
- Re-evaluation of viable pine rockland habitat potential



Day One of Treatment



Initial Assessment: No pines visible, entry without a machete is almost impossible. Habitat edges are made up of dense Burmared and invasive trees. No pine rockland species are notable from the outside.

Initial Treatment of Invasive Species



Initial Treatment of Invasive Species

Treated:

- 257 Brazilian-pepper (*Schinus terebinthifolius*)
- 421 earleaf acacia (*Acacia auriculiformis*)
- 263 lead tree (*Leucaena leucocephala*)
- 148 woman's tongue (*Albizia lebbek*)
- 54 Queensland umbrella (*Schefflera actinophylla*)
- 43 Jasmine (*Jasminum dichotomum*)
- 3 Java plum (*Syzygium cumini*)
- 29 rosary pea (*Abrus precatorius*)
- Brush-cut 3 acres of Burmared (*Neyraudia reynaudiana*)



Initial Treatment of Invasive Species



Initial Treatment of Invasive Species

Open, sandy pockets with diverse herb and grass layer found throughout pineland interior, offering a glimpse of hope!



East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Atala butterfly, *Eumaeus atala*

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Longstalk stopper, *Psidium longipes* (State endangered)

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Prickly pear cactus (*Opuntia humifusa*)

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Pineland clustervine (*Jacquemontia curtisii*) State threatened

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Silver palm (*Coccothrinax argentata*) State threatened

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Quailberry (*Crossopetalum ilicifolium*) State endangered

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Man-in-the-ground (*Ipomoea microdactyla*) State endangered

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found

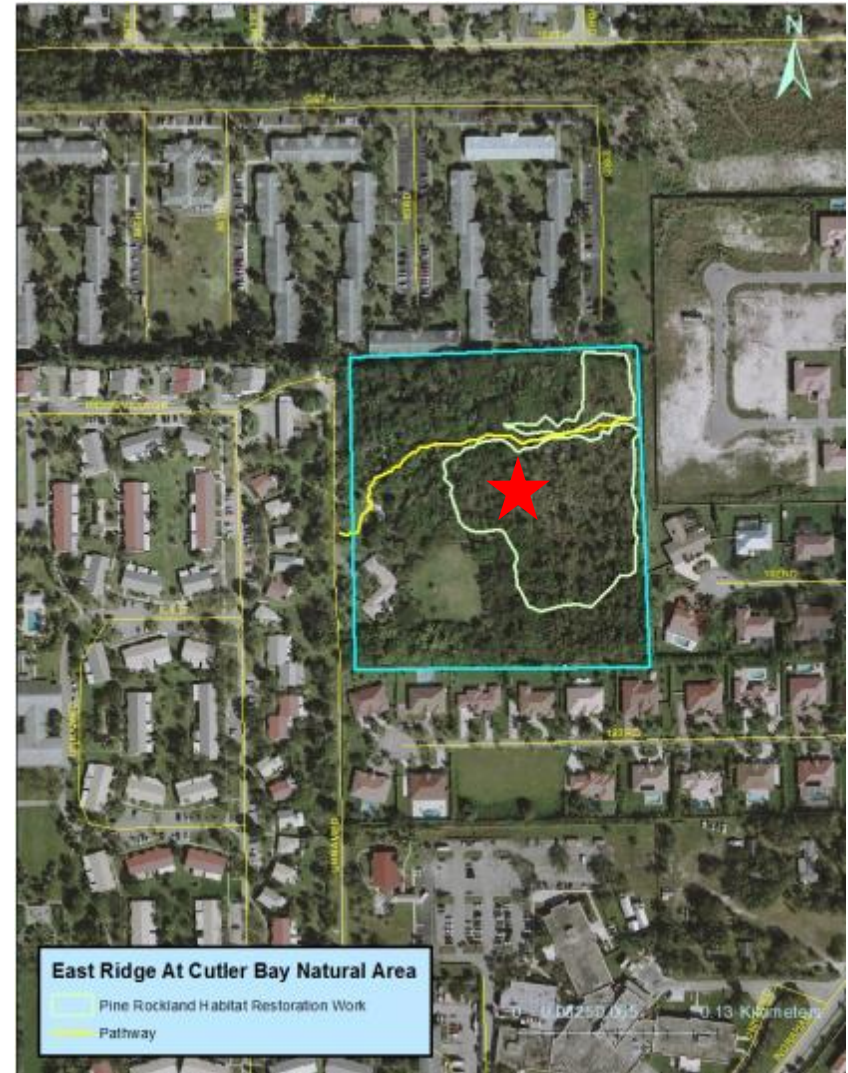


Gopher tortoise burrows

East Ridge at Cutler Bay Pine Rockland Plants and Animals Found



Small's milkwort (*Polygala smallii*)
Federally endangered





IRC Ecological Restoration and Management:
Gardenwalk Apartments
Pine Rockland



Chamaesyce deltoidea subsp. *adhaerens*



IRC Ecological Restoration and Management: Palmetto Bay Village Center Pine Rockland and Rockland Hammock





IRC Ecological Restoration and Management: Palmetto Bay Village Center Pine Rockland and Rockland Hammock





Palmetto Bay and Cutler Bay Coastal Habitat Restoration Project



The Institute for Regional Conservation and the National Park Service have partnered with the Tropical Audubon Society of Florida, Palmetto Bay Village Center, South Florida Water Management District, Fairchild Tropical Botanic Garden, Florida Forestry, Village of Palmetto Bay, Town of Cutler Bay, Miami-Dade County and the U.S. Fish and Wildlife Service Atlantic Coast Joint Venture to begin restoring more than 370 acres of migratory bird habitat along Florida Bay in Miami-Dade County. [The Partnership was awarded the U.S. Small Grant](#) from the U.S. Fish and Wildlife Division of Bird Habitat in 2013 to achieve goals outlined in the [North American Wetlands Conservation Act of 1989](#).

The wetlands and uplands in the project area occur between SW 176th Street and SW 195th Street east of Old Cutler Road and extend outward to Florida Bay.

Restoration Activities Include:

- Eradication of habitat-altering, non-native “invasive” species
- A controlled burn to reintroduce the natural fire regime and reduce fuel loads in project area
- Planting of native grasses and herbs in areas where non-native vegetation was treated to accelerate the restoration process and discourage recruitment of invasive species.
- Installation of nesting bird boxes throughout the project area

North American Wetlands Conservation Act

The North American Wetlands Conservation Act (P.L. 101-233) (December 13, 1989) authorizes a wetlands habitat program, administered by the United States Fish and Wildlife Service, which provides grants to protect and manage wetland habitats for migratory birds and other wetland wildlife in the United States, Mexico, and Canada. A nine-member council meets periodically to decide which projects to fund. The program encourages private-public cost-sharing projects.

This piece of legislation has provided North America with different and effective ways to preserve the wetlands to ensure that wildlife and migratory birds' habitats are a safe and resourceful environment. More than 2,000 projects have been started over 3,000 collaborations with other organizations. These collaborations include private and public landowners and over 25 million acres in the United States.





Atlantic Coast Joint Venture

The Atlantic Coast Joint Venture Vision:

“Partners working together for the conservation of native bird species in the Atlantic Flyway region of the United States.”

The Atlantic Coast Joint Venture is one of fourteen habitat Joint Venture partnerships in the United States. The joint venture brings together public and private agencies, conservation groups, and other partners focused on the conservation of habitat for native birds in the Atlantic Flyway of the United States from Maine south to Puerto Rico.

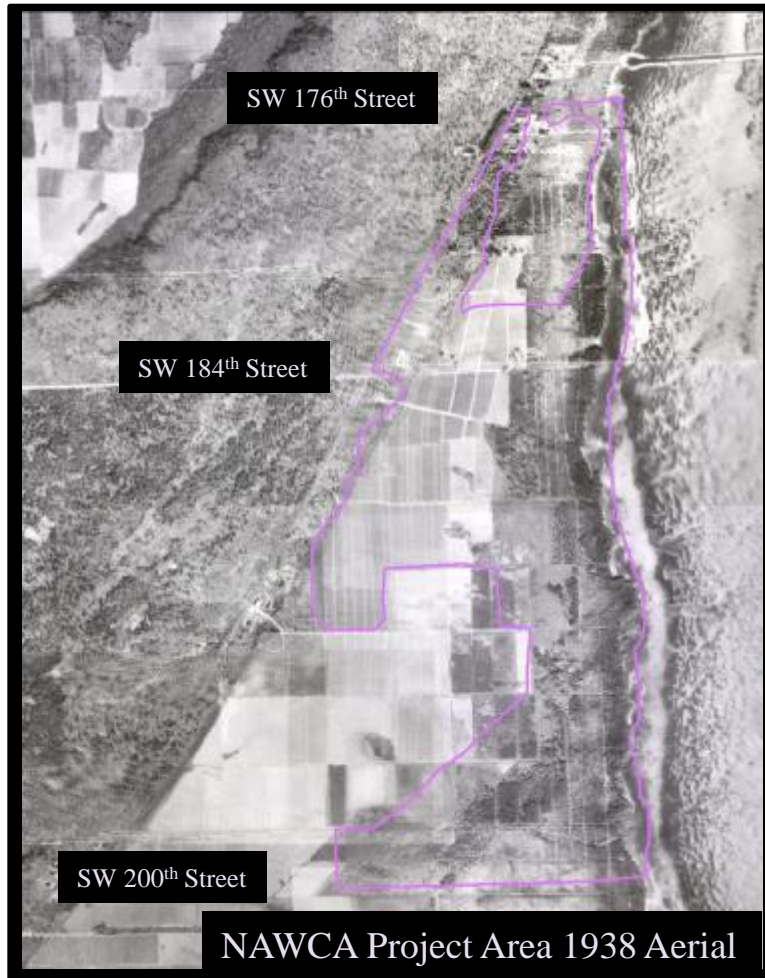
The Atlantic Coast Joint Venture encompasses the 17 Atlantic Flyway states and Puerto Rico. The habitats range from boreal forest and rocky coastlines to mangrove wetlands and coral reefs. Over 600 native bird species breed, migrate and winter in the Atlantic Coast Joint Venture.

The mission of the Atlantic Coast Joint Venture is to provide a forum for federal, state, regional and local partners to coordinate and improve the effectiveness of bird conservation planning and implementation in the Atlantic Flyway region of the United States.



**Atlantic Coast Joint Venture
Boundary In Green**

Palmetto Bay and Cutler Bay Coastal Habitat Restoration Project Area





IRC Education and Outreach: Pine Rocklands

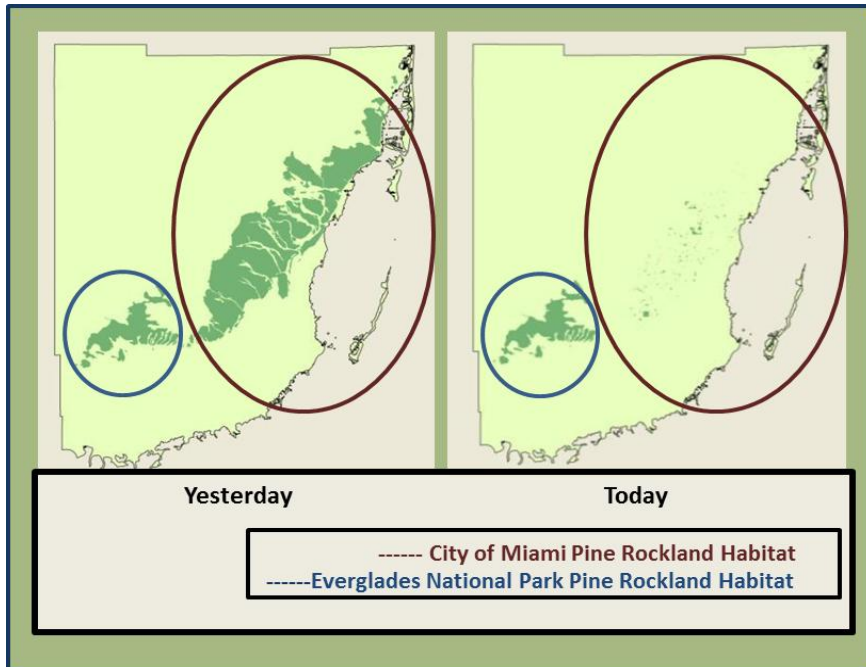


IRC leads volunteer work days, neighborhood workshops and educational events in an effort to reach out to the community about pine rockland conservation.



STILL SO MUCH TO DO!!!

LET'S SAVE THE PINE ROCKLANDS...



NFC Acreage Decreasing Each Year
SO MANY Pine Rocklands Up For Sale

Many private landowners are doing great, but there are still so many minds that need to change

Effects of invasive species taking their toll on the ecosystem

Effects of fire suppression taking their toll on the ecosystem

Effects of fragmentation, genetic isolation and biodiversity loss taking their toll on the ecosystem

Why Save The Pine Rocklands?

-Save the Ecosystem, Save Habitat-

Encourage a rich diversity of many different species of native birds, butterflies and other desirable wildlife.



-Improved neighborhood aesthetics—

Native wildflowers, trees, shrubs and grasses put on a year round show for residents to enjoy.

-Lower maintenance costs –

Over time, habitat restoration now will decrease maintenance costs later.



**Global
Environmental
Health-Local**
conservation projects help make the world a better place!

Thank You

IRC Staff, Partnering Agencies and Organizations,
Donors, Volunteers and Enthusiastic Conservation
Stewards Near and Far!



You Can Help:

DONATE, COLLABORATE!

**Tax deductible donations can be made on
The Institute For Regional Conservation's (IRC) website
www.regionalconservation.org.**

IRC is a 501c(3) non-profit organization.

For Collaboration Inquiries, please contact me!

Sarah Martin

IRC Pine Rockland Initiative Program Coordinator

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