

APPENDIX E1
Educational Materials

Introduction

Coral Reef Commons is a planned mixed-use development located in Miami-Dade County. Due to the potential occurrence of protected species, a Habitat Conservation Plan (HCP) was developed for the project. HCPs are planning documents required as part of an application for an incidental take permit (ITP). To ensure that wildlife, native plants, and their natural ecosystems on Coral Reef Commons are properly managed, the HCP identified best management practices, or BMPs. Following is an overview of the Coral Reef Commons project, a description of potential protected species that may occur within the project, and the BMPs identified for residential and commercial entities.

Project Overview

The Coral Reef Commons (CRC) Project is a 137.9-acre mixed-use development and consist of the following:

- 86.49 acres of commercial and residential development
- 51.41 acres of on-site preserves
- 3.88 acres of stepping stones

The 3.88 acres of stepping stones, located internal to the development, are areas that will be planted with pine rockland species.

\\fms01\drawings\2014\20149839-000\ArcGIS\Figures\ALT 6 Site Plan.mxd Date: 2/15/2017 User: pml



NOTES
 1. The Alternative 6 Site Plan was provided by Ram Coral Reef.

DEVELOPMENT DATA	
TOTAL COMMERCIAL AREA	289,000 SF
TOTAL RESIDENTIAL UNITS	900 UNITS
TOTAL DEVELOPMENT FOOTPRINT	86.35 ACRES
PRESERVE AREA	
PRESERVE	43.36 ACRES
ADDITIONAL PRESERVE (SOUTHERN CORRIDOR)	2.16 ACRES
PART OF OUTPARCEL 6	1.12 ACRES
OUTPARCEL 7	4.77 ACRES
TOTAL PRESERVE	51.41 ACRES
PINE ROCKLAND "STEPPING STONES"	3.88 ACRES

LEGEND	
	PRESERVE
	ADDITIONAL PRESERVE
	"STEPPING STONES" - INDICATES AREAS WHERE PLANTS NATIVE TO THIS PINE ROCKLAND SITE ARE TO BE INSTALLED
	FORESTED AREA ON D.O.D. LAND
	OPEN / GREEN SPACE (CONCEPTUAL)

Coral Reef Commons
 Miami-Dade County, Florida



6941 SW 196TH AVE
 SUITE 32
 PEMBROKE PINES, FL 33332
 PHONE (954) 626-0123
 E.B. #642 & L.B. #642

Alternative 6 Site Plan
 Reduced Commercial/Increased Preserve
 (Preferred Alternative)

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
April 2015	20149839-000		As Shown	Figure 12

Protected Species

The protected species, referred to as “Covered Species”, included in the HCP consist of eight wildlife species and fourteen plant species. Prior to any construction occurring, the Preserve Biologist will provide an overview of the Covered Species. Educational material on the Covered Species will be provided to all contractors. The educational material includes a description of each species and information on what to do and who to contact in the event one of these species is encountered.

The wildlife species include the Bartram’s scrub-hairstreak, Florida bonneted bat, eastern indigo snake, rim rock crowned snake, gopher tortoise, Florida leafwing butterfly, Miami tiger beetle and white crowned pigeon. The plant species include tiny polygala, deltoid spurge, crenulate lead-plant, Florida brickell bush, Garber’s spurge, small’s milkpea, sand flax, Carter’s small-flowered flax, Blodgett’s silver bush, Florida prairie clover, Florida pineland crabgrass, Everglades bully, Florida bristle fern and clamshell orchid.

Covered Wildlife Species

Common Name	Scientific Name	Status	Group	Documented on the CRC Property
Bartram's scrub-hairstreak butterfly	<i>Strymon acis bartrami</i>	FE	Insect	Yes
Florida bonneted bat	<i>Eumops floridanus</i>	FE	Mammal	No
Eastern indigo snake	<i>Drymarchon corais couperi</i>	FT	Reptile	No
Rim rock crowned snake	<i>Tantilla oolitica</i>	ST	Reptile	No
Gopher tortoise	<i>Gopherus polyphemus</i>	ST, FC	Reptile	No
Florida leafwing butterfly	<i>Anaea troglodyta floridalis</i>	FE	Insect	No
Miami tiger beetle	<i>Cicindelidia floridana</i>	FE	Insect	No
White-crowned pigeon	<i>Patagioenas leucocephala</i>	ST	Bird	No

Covered Plant Species

Common Name	Scientific Name	Status	Group	Documented on the CRC Property
Tiny polygala	<i>Polygala smallii</i>	FE	Plant	Yes
Deltoid spurge	<i>Chamaesyce deltoidea</i>	FE	Plant	Yes
Crenulate lead-plant	<i>Amorpha crenulata</i>	FE	Plant	No
Florida brickell bush	<i>Brickelia mosieri</i>	FE	Plant	No
Garber's spurge	<i>Chamaesyce garberi</i>	FE	Plant	No
Small's milkpea	<i>Galactia smallii</i>	FE	Plant	No
Sand flax	<i>Linum arenicola</i>	FE	Plant	No
Carter's small-flowered flax	<i>Linum carteri var. carteri</i>	FE	Plant	No
Blodgett's silver bush	<i>Argythamnia blodgettii</i>	FT	Plant	No
Florida prairie clover	<i>Dalea carthagenensis var. floridana</i>	FE	Plant	No
Florida pineland crabgrass	<i>Digitaria pauciflora</i>	FT	Plant	No
Everglades bully	<i>Sideroxylon reclinatum ssp. austrofloridense</i>	FT	Plant	No
Florida bristle fern	<i>Trichomanes punctatum ssp. floridanum</i>	FE	Plant	No
Clamshell orchid	<i>Encyclia cochleata var. triandra</i>	SE	Plant	No

FE - Federally endangered FT - Federally threatened FC - Federal candidate ST - State threatened
SE - State endangered PL – Federal proposed listing

Covered Species Descriptions

Bartram's Scrub-hairstreak Butterfly

Bartram's scrub-hairstreak butterfly is listed a federally endangered species under the U.S. Endangered Species Act (16 U.S.C. 1531 et seq.).

How can you identify Bartram's hairstreak butterfly?

It is a small butterfly approximately 25 mm (1 inch) in length, roughly the size of a quarter. It has dark gray-colored upper wings, light gray-colored under wings, easy-to-recognize broad white bands with a black edge that can be seen when the wings are closed, with orange blotches and markings.



Bartram Hairstreak Butterfly



Pineland Croton

Where are they found?

Bartram's scrub-hairstreak butterfly occurs within pine rockland habitat in Miami-Dade County and Monroe Counties. Bartram's scrub-hairstreaks seldom fly very far from their host plant, pineland croton. Pineland croton is a small, evergreen woody shrub, about 1.5–3 feet tall, with dark green linear leaves and white or golden hairs on their lower surface. Pineland croton tends to grow along pineland edges and in cleared or open spaces, including trails. Portions of the Coral Reef Commons Property fall within critical habitat for this species.

What should you do if you see a Bartram's hairstreak butterfly?

1. If you encounter a Bartram's hairstreak butterfly, avoid all contact with it. If you are driving a vehicle or heavy equipment, stop, cease operation and allow the butterfly to move away from the area on its own before resuming construction.
2. Immediately contact your supervisor or the Project Biologist to report the location and circumstance of all sightings.

Florida Bonneted Bat

The Florida bonneted bat is listed as an endangered species under the U.S. Endangered Species Act (16 U.S.C. 1531 et seq.).

How can you identify Florida bonneted bat?

The Florida bonneted bat (formerly known as the Florida mastiff bat) is the largest species of bat in Florida, reaching a length of 6.5 inches (16.5 centimeters) with a wingspan of 20 inches (51 centimeters). It is a free-tailed bat, with short, glossy fur that varies in color from black to brown to grayish or cinnamon brown, with the lower portion of the hair shaft white. Leathery rounded ears are joined at the midline and project forward. The leading ear edge is thick and protrudes over the eye.



Florida Bonneted bat

Where are they found?

Habitat for the bonneted bat consists of foraging areas and roosting sites, which include both natural and artificial structures. Major habitat types where this species is known to occur include dry prairie and pine flatwoods, and they have been detected foraging in tropical hardwoods, over water, and manmade areas such as golf courses and neighborhoods. They have been known to roost in buildings, tree cavities such as those made by woodpeckers, and bat houses. It has been suggested they may also roost in rocky crevices and outcrops on the ground. It is not known to what extent such roost sites are suitable. Florida bonneted bats are closely associated with forested areas because of their tree-roosting habits. The place a bat lives is called a roost. Florida bonneted bats roost singly or in groups of up to a few dozen individuals. They leave their roosts after dark to forage for insects, rarely flying below 10 meters (33 feet) above the ground. They are one of the few bat species that have a call that falls within the range of human hearing. Florida bonneted bats have an extensive breeding season, with pregnant females having been observed in June through September.

What should you do if you see a bonneted bat?

1. If you encounter a bonneted bat, avoid all contact with it. If you are driving a vehicle or heavy equipment, stop, cease operation and allow the bat to move away from the site on its own before resuming construction.
2. Immediately contact your supervisor or the Project Biologist to report the location and circumstance of all sightings.
3. Do not touch the bat or harass it in any way.
4. In the event a roost is identified, a 100' buffer will be established around the roost. No construction activities can occur within the 100' buffer until approved by the Project Biologist.

Eastern Indigo Snake

The eastern indigo snake is listed as a threatened species under the U.S. Endangered Species Act (16 U.S.C. 1531 (a)).

Description

The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.



Eastern Indigo Snake

Similar Snakes

The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

Life History

The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

Protection under Federal and State Law

The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

If you see a LIVE Eastern Indigo Snake on the Site

1. Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
2. Personnel must NOT attempt to touch or handle snake due to protected status.
3. Take photographs of the snake, if possible, for identification and documentation purposes.
4. Immediately notify supervisor or the applicant's designated agent, and the appropriate USFWS office, with the location information and condition of the snake.
5. If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

If you see a DEAD Eastern Indigo Snake on the Site

1. Cease clearing activities and immediately notify supervisor or the applicant's designated agent, and the appropriate USFWS office, with the location information and condition of the snake.
2. Take photographs of the snake, if possible, for identification and documentation purposes.
3. Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336

Panama City Field Office – (850) 769-0552

South Florida Field Office – (772) 562-3909

Rim Rock Crowned Snake

The rim rock crowned snake is listed as threatened by the State of Florida Chapter 68A-27, F.A.C. This Rim Rock crowned snake is also a candidate for listing under the federal Endangered Species Act (16 U.S.C. 1531 et seq.).

Description

This small snake species is non-venomous and can reach a length of up to around 10 inches (25 centimeters). It is tan to beige, with a pinkish white to cream belly, a black to light-brown head, and smooth scales. There is often a pale blotch just behind the eye. Little is currently known about its life history.



Rim Rock Crowned Snake

Life History

Though it also occurs in the Florida Keys, on the mainland the rim rock crowned snake occurs on a low elevation pine ridge called the Miami Rim Rock formation from which it gets its name. It inhabits pine rocklands and hardwood hammocks near fresh water, and has also been reported in human-altered habitats such as roadsides and vacant lots. This species is seldom seen and fossorial (adapted to living underground). They can be found in holes and eroded depressions in the limestone bedrock but they can also be found periodically in rotten logs, under rocks, leaf litter and trash. Although this species had not been observed within the Coral Reef Commons property, it has been documented in adjacent properties. It is a cryptic (secretive) species and could potentially occur within any of the habitats on-site.

If you see a LIVE Rim Rock Crowned Snake on the Site

1. Cease clearing activities and allow the live rim rock crowned snake sufficient time to move away from the site without interference;
2. Personnel must NOT attempt to touch or handle snake due to protected status.
3. Take photographs of the snake, if possible, for identification and documentation purposes.
4. Immediately notify supervisor or the applicant's designated agent, and the appropriate USFWS office, with the location information and condition of the snake.
5. If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the FWC returns the call with further guidance as to when activities may resume.

If you see a DEAD Rim Rock Crowned Snake on the Site

- 1.** Cease clearing activities and immediately notify supervisor or the applicant's designated agent, and the appropriate FWC office, with the location information and condition of the snake.
- 2.** Take photographs of the snake, if possible, for identification and documentation purposes.
- 3.** Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone number of FWC to be contacted if a live or dead rim rock crowned snake is encountered:

West Palm Beach Office – (561) 625-5122

Gopher Tortoise

The gopher tortoise is a candidate species under the U.S. Endangered Species Act (16 U.S.C. 1531 (a)), and listed as threatened by the State of Florida (Chapter 68A-27, F.A.C.). Gopher tortoise burrows provide homes for over 360 various species, including the federally threatened eastern indigo snake.

How can you identify the gopher tortoise?

The gopher tortoise is a medium-sized land turtle with characteristic stumpy, elephant-like hind feet and flattened, shovel-like forelimbs designed for digging in sandy soil. Gopher tortoises average 9 to 11 inches in length, although juveniles can be as small as 2 or 3 inches. Their shells are medium to dark brown in color, although juveniles may be yellowish brown.



Gopher Tortoise

How to identify signs of gopher tortoises

This species spends much of its time in long burrows that offer refuge from cold, heat, drought and predators. Frequently the tortoise itself will not be seen, however, you may tell if a gopher tortoise lives in the area by identifying their burrows from the following signs:

- Mound of lighter colored sand mound, or “apron”, at the entrance created when the tortoise excavates its burrow
- The top of the burrow will have a half moon appearance and the bottom may be flat which is also the shape of the tortoise
- Debris can often cover the entrance to an active burrow
- Burrows can be well hidden: under roots of vegetation and among
- Burrows average 15 feet long and 7 feet deep



Gopher Tortoise Burrow

What should you do if you see a gopher tortoise?

- 1.** Cease work and maintain a minimum 25-foot protective buffer from the burrow or tortoise.
- 2.** Immediately notify your direct supervisor or the Project Biologist with the location and gopher tortoise or its burrow.
- 3.** Do not disturb or touch the gopher tortoise or its burrow in any manner. Only the Project Biologist may come into contact with a gopher tortoise or its burrow.
- 4.** Take a photo of the tortoise or burrow, if possible.
- 5.** The Project Biologist will determine whether it may be possible to continue construction activities while maintaining a minimum 25' protective buffer from the burrow.

Florida Leafwing Butterfly

The Florida leafwing butterfly is listed as a federally endangered species under the U.S. Endangered Species Act (16 U.S.C. 1531 et seq.).

How can you identify the Florida leafwing butterfly?

It is a medium-sized butterfly approximately 2.75 to 3 inches in length, roughly the width of a baseball. The upper-wing (or open wing) surface color is red to red-brown or orange, the underside (closed wings) is gray to tan, with a tapered outline. In flight, the bright red or orange upper wings make this species easy to spot, while its cryptic underwing coloration makes it look like a dead leaf when at rest.



Florida Leafwing Butterfly

Where are they found?

The Florida leafwing butterfly is only found in southernmost Florida. It occurs only within pine Rocklands that contain its host plant, the pineland croton. Portions of the Coral Reef Commons Property fall within critical habitat for this species. The butterfly has not been observed within the Richmond Area (including Coral Reef Commons) for several decades; however, potential presence may occur wherever there is pineland croton.

What should you do if you see a Florida leafwing butterfly?

1. If you encounter a Florida leafwing butterfly, avoid all contact with it. If you are driving a vehicle or heavy equipment, stop, cease operation and allow the butterfly to move away from the site on its own before resuming construction.
2. Immediately contact your supervisor or the Project Biologist to report the location and circumstance of all sightings.

Miami Tiger Beetle

The Miami tiger beetle is listed as endangered under the U.S. Endangered Species Act (16 U.S.C. 1531 et seq.).

How can you identify the Miami tiger beetle?

The beetle has an oval shape, bulging eyes and is one of the smallest tiger beetles in the United States (less than 1/2 inch long). The underside of the abdomen is orange to orange-brown in color, while the dorsal (top) surface is a distinctive shiny dark green with a small white patch at the posterior end. They are active daytime hunters and run after prey.



Miami Tiger Beetle

Where are they found?

This species is found exclusively in pine rocklands and requires areas with extensive pockets of quartz sand. As is typical of other tiger beetles, adult Miami tiger beetles are active daytime predators. The beetle has a limited range and is currently only known to occur in a few populations within the Richmond Area of Miami-Dade. No observations have been recorded within the Coral Reef Commons; however, it is possible this species may occur within areas of pine rockland containing open sandy areas.

What should you do if you see a Miami Tiger Beetle

1. If you encounter a Miami tiger beetle, avoid all contact with it. If you are driving a vehicle or heavy equipment, stop, cease operation and allow the butterfly to move away from the site on its own before resuming construction.
2. Immediately contact your supervisor or the Project Biologist to report the location and circumstance of all sightings.

White Crowned Pigeon

The white-crowned pigeon is listed as a threatened species in the State of Florida (Chapter 68A-27 F.A.C.).

How can you identify the white-crowned pigeon?

The white-crowned pigeon has a dark gray body with green feathers on their back and neck and a white crown that reaches down just below the eye. Both the crown and body of females are duller than in males, and juveniles lack the white crown. This species of pigeon can reach up to 14 inches long with a wingspan of 23 inches.



White Crowned Pigeon

Where are they found?

The pigeon primarily uses mangrove islands for breeding, and tropical hardwood hammocks for foraging and roosting. It forages to a lesser extent in pine rocklands with fruit-bearing understory. Its distribution in Florida is mainly limited to Florida Bay, Biscayne Bay, and the Florida Keys except for a few areas in Collier and Palm Beach counties. Though the white crowned pigeon has not been observed within the project area, it may potentially forage in the fruiting shrubs throughout the site.

What should you do if you see a white-crowned pigeon?

1. If you encounter a white-crowned pigeon, avoid all contact with it. If you are driving a vehicle or heavy equipment, stop, cease operation and allow the bird to move away from the site on its own before resuming construction.
2. Immediately contact your supervisor or the Project Biologist listed to report the location and circumstance of all sightings.
3. Do not touch the bird or harass it in any way.

Protected Plant Species

Tiny Polygala

Identification: A small (<8 inches tall), short-lived perennial herb, flowering and then disappearing until the next suitable disturbance. It has one to four, short, usually unbranched stems, and a well-developed, scented taproot. The corolla is a greenish-yellow color with three petals. Seedlings can be observed from late October through April, but are most typically seen from December to February. Can flower throughout the year, with peak during the summer.



Tiny Polygala

Where Found: Occurs in pyrogenic (dry and fire-prone) communities close to the Atlantic coast, including pine rocklands, open sand pine scrub, slash pine, high pine, and well-drained coastal spoil. Requires relatively open canopy for high levels of light and occurs in sand pockets at least 2 cm. deep. Known to occur within the open pine rocklands of Coral Reef Commons.

Deltoid Spurge

Identification: Prostrate, perennial herb belonging to the Euphorbiaceae or spurge family. It grows in mats over exposed limestone. In some cases the stems will ascend and form tufts. Mats or tufts may be up to 15 cm wide. Leaves ~0.6 cm long, thick, rounded-triangular (deltoid) or ovate, opposite, smooth or sometimes hairy below, bright green, with slightly rolled-under margins.



Deltoid Spurge

Where Found: occurs only in Miami-Dade County on Opalocka-Rock Outcrop soils. Has similar habitat requirements to tiny polygala, only the deltoid spurge occurs on limestone adjacent to sand pockets. Requires an open shrub canopy and minimal organic litter. Known to occur within the open pine rocklands of Coral Reef Commons.

Crenulate Lead-Plant

Identification: Rhizomatous, perennial, deciduous shrub that grows to 1.5 m in height and is endemic to Miami-Dade County. The branches of the plant are reddish purple and contain 25 to 33 gray and green leaflets on leaves that are 0 to 15 cm long. It has a showy white flower that is 5.2 mm long and 4.2 mm wide.



Crenulate Lead-Plant

Where Found: Occurs in seasonally hydrated soils that are frequently burned such as wet pinelands, transverse glades, and hammock edges. It requires open sun to partial shade. Has a very limited distribution range that encompasses 20-mi² from Coral Gable to Kendall. The closest natural population of crenulate lead-plant occurs in Pinecrest, approximately five miles northeast of Coral Reef Commons. An experimental population of crenulate lead-plant has been introduced nearby within the Richmond Area.

Florida Brickell Bush

Identification: A perennial herb 1 to 3.5 ft tall that is slender, erect, and branching. Leaves are alternate, narrow, linear, thick, toothed and usually spread downward. The flowers are white and are in loose, open clusters at the end of branches.



Florida Brickell Bush

Where Found: This species is found only in Miami-Dade pine rocklands that have an open, well-lit sub canopy with exposed limestone and minimal organic material. Its current distribution is in central and southern Miami-Dade County from SW 120 Street to Florida City. Although this species hasn't been found at the project site, it has been documented in adjacent pine rocklands within the Richmond Area, and Coral Reef Commons contains approximately 104 acres of designated critical habitat for this species.

Garber's Spurge

Identification: An erect or occasionally prostrate, robust perennial herb, softly hairy throughout, with wiry stems up to 30 cm long. The leaves are ovate in shape and 4 to 9 mm long with entire or obscurely serrate leaf margin. Cyathia (small cup-like structures holding flowers) are solitary in leaf axils. Fruit is 3-lobed and hairy.



Garber's Spurge

Where Found: Endemic to south Florida, where it occurs on sandy soils over limestone in pine rocklands, hammock edges, coastal rock barrens, grass prairies, salt flats, beach ridges and swales. It requires open sunny areas and needs periodic fires to maintain habitat suitability.

Small's Milkpea

Identification: A perennial legume with numerous trailing stems up to 6 feet long radiating from large woody taproots, possessing relatively large flowers pale pink to purple, less than 1.2 cm long, in clusters of 1 to 5 at ends of the stems. Leaves are alternate, with three broadly oval leaflets, each less than 2.5 cm long. Leaves appear gray due to dense hair (visible only with magnification). Fruit a hairy pod, less than 4 cm long.



Small's Milkpea

Where Found: Endemic to the pine rocklands of Miami-Dade County. It occurs in the Redland pine rocklands in the southern part of the county. Distribution is spotty due to isolated areas of remaining habitat. Prefers open sun and little shade, it is threatened by hardwood encroachment and invasive infestations. It does not occur in areas with high amounts of Burma reed.

Sand Flax

Identification: A small, wiry, yellow-flowered perennial herb that can easily go unnoticed, or be confused with the more common wildflower pitted stripeeed, which is common at Coral Reef Commons. It is 20 to 71 cm tall. Leaves are around 1 cm long and very narrow. Flowers are around 1 cm wide with five petals. It flowers March-November. Petals fall off after flowers open in the morning.



Sand Flax

Where Found: found in pine rockland, disturbed pine rockland, marl prairie, roadsides on rocky soil, and disturbed areas. It is known to occur in Miami-Dade and Monroe counties in 12 locations. As with other pine rockland plants, it requires periodic fires to maintain an open, well-lit habitat with low levels of organic litter. It has been documented within adjacent pine rocklands in the Richmond Area.

Carter's Small-Flowered Flax

Identification: It is a short-lived perennial herb similar in appearance to the more common wildflower pitted stripeeed. It is 10 to 61 cm tall. Leaves are less than 2 cm long and very narrow. Flowers are around 1 cm wide with five yellow-orange petals.



Carter's Small-Flowered Flax

Where Found: Endemic to Miami-Dade County where it grows in pine rocklands, and disturbed pine rocklands. It is currently found from R. Hardy Matheson Preserve (near Pinecrest) southwest to Naranja/Modello. The closest natural population occurs approximately 3 miles to the east of the Richmond Area. 104 acres of Critical Habitat for this species occurs in Coral Reef Commons.

Blodgett's Silverbush

Identification: An erect, short-lived, perennial, evergreen forb. Has a woody base and non-woody, often unbranched, green stems, to 2 feet (0.6 meters) tall. Leaves are 1.5 to 4 cm long, blue-green, alternate, well spaced along the stem, oval to elliptic, and hairy. Flowers are white with five petals.



Blodgett's Silverbush

Where Found: occurs in sunny gaps and on the edges of rockland hammocks and pine rocklands. Capable of tolerating some level of human disturbance and can be found in disturbed rocklands or in completely scarified pine rockland. It is found in Miami-Dade County and Monroe County in the Florida Keys.

Florida Prairie-Clover

Identification: A shrub growing up to 1 to 2 meters with a woody base and red, contorted, velvety, non-woody branches. Its leaflets number 11 to 23 and are oval and gland dotted on the underside. Its flowers are small and whitish turning maroon. The loose flowers and hairy stems are differentiating from other *Dalea* spp.



Florida Prairie-Clover

Where Found: Endemic to Florida, it used to occur up to Palm Beach County; however those populations have been destroyed and nine occurrences remain within Collier, Monroe and Miami-Dade counties. Found in pine rocklands, edges of rockland hammocks, coastal uplands, and marl prairies.

Florida Pineland Crabgrass

Identification: a rhizomatous perennial grass with long, hairy leaf blades that are twisted, spreading 7-18 cm.



Florida Pineland Crabgrass

Where Found: Occurs most commonly along the ecotone between pine rocklands and marl prairies. Historically, it occurred along the central and southern portions of the Miami Rock Ridge but is now confined to Everglades National Park and Big Cypress National Park.

Everglades Bully

Identification: A woody shrub 1 to 2 meters tall. Leaves are thin, obovate or ovate, and evergreen. The leaves are a defining characteristic from the other two subspecies of *S. relinatum* in Florida, which are persistently pubescent (hairy) on their undersides, rather than smooth or pubescent only along the midvein.



Everglades Bully

Where Found: Restricted to pinelands with understory on limestone rock. Found in low elevation pine rocklands at the pineland/marl prairie ecotones that flood each summer. Everglades bully is known to occur in the Richmond Area.

Florida Bristle Fern

Identification: Very small, mat-forming fern, with crowded, overlapping leaves less than 1 inch (2.5 cm) long, blades rounded and elongated with long, brownish black hairlike outgrowth (trichomes). Superficially resembles some liverwort species.



Florida Bristle Fern

Where Found: Always associated with shaded limestone outcrops and can be found in rockland hammocks and solution holes, which provide higher levels of moisture from the accumulation of organic soils. Grows on tree trunks in hammocks, edges of limesinks, and limestone boulders, often with mosses and liverworts. Historically found in central and south Florida, it is now only found in Sumter and Miami-Dade counties.

Clamshell Orchid

Identification: Attractive orchid with a pear-shaped, somewhat flattened stem (pseudobulb) attached to tree trunks and branches by numerous white aerial roots. Its strap-like leaves grow to 30 cm long. Flowering stem reaches to 40 cm long, with up to ten flowers. The flower has drooping, narrow, twisted, yellow-green sepals to 3.5 cm long, two petals, and an erect, purple-brown, shell-like lip marked with yellow.



Clamshell Orchid

Where Found: Grows on trunks and branches of pond apple, cypress, live oak, and buttonwood trees in swamps and hammocks in southern Florida, the West Indies, Central and South America.

Community (Residential and Commercial Operations) BMPs

- A. Speed limits of 15mph will be posted within the residential complex and the commercial speed limit of 25mph will be posted;
- B. All Pets are required to be leashed. Cats are required to be restrained (under control) on a leash, in a kennel, or in a cat-proof yard or house.
- C. CRC design includes a dog park within the community, positioned away from the On-site Preserves. Dogs will only be allowed off-leash within this area, which is contained by a secure fencing:
- D. All tenants (commercial and residential) will be required to sign documentation that includes acknowledgement of the pet and waste disposal regulations, of applicable regulations for pesticide, insecticide and treatments of rodents and household pests requiring label requirements for application and storage;
- E. Property Management will enforce the community BMPs;
- F. Waste and recycling receptacles and dumpsters will be placed throughout the community and commercial areas. A private waste disposal and recycling service will be contracted to maintain these receptacles;
- G. Landscaping standards will utilize native and non-invasive plant species, in accordance with MDC zoning approval;
- H. Identification material for the Covered Species will be made available for tenants;
- I. Tenants will be educated on the appearance of indigo snakes and requested to report observations of indigo snakes in the community to the HCP Coordinator;
- J. Tenants will be advised to contact the HCP Coordinator if they observe a gopher tortoise outside of the preserve and instructed to not collect or move the individual;
- K. Engineering designs will be incorporated that discourage bats and other wildlife from using buildings or structures.

Lighting for CRC Property

- A. Lighting used for streets and parking lots will be engineered to achieve Illuminating Engineering Society of North America ("IESNA") cutoff classification or equivalent criteria as well as compliance with applicable municipal requirements

Firewise Community for CRC Property

- A. All lessees, property owners, and/or tenants within the CRC Property will be required to sign documentation acknowledging fire management activities within the CRC Property and on adjacent properties in the Richmond Area;
- B. Construction and landscaping will follow firewise guidelines (www.firewise.org);

- C. Home Ignition Zones (HIZ) will be established and maintained to allow a defensible space between residential units and the On-site Preserves;
- D. Fire hydrants will be strategically and specifically installed along the On-site Preserves boundaries to facilitate prescribed burning, quick mop up, and enhance efficiency of any wildfire suppression.

Community Pesticide Use for CRC Property

- A. Application of any pesticide will adhere to pesticide labels in accordance with federal regulations;
- B. Application of insecticides within the Stepping Stones will be restricted. Pest management of insects will be restricted to target those pests that are problematic to the species covered by the ITP and/or meeting success criteria;
- C. Application of insecticide and rodenticide will adhere to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. § 136 et seq. requirements as to application, storage, and label requirements;
- D. All application equipment will be maintained in good working order;
- E. Equipment will be checked for leaks and malfunctions before use to minimize the potential for accidental spills;
- F. Pesticide application equipment and pesticide containers will be rinsed in a manner to minimize drainage into waterbodies.

General On-site Preserves BMPs

- A. Public utilization of the On-site Preserves, including residential and commercial tenants, will be prohibited included in tenant leases;
- B. Dumping, littering, and unauthorized clearing within the On-site Preserves is prohibited;
- C. Hunting, trapping, or harassing wildlife is prohibited;
- D. Unauthorized harvesting of plants is prohibited;
- E. Feeding of wildlife will be prohibited.