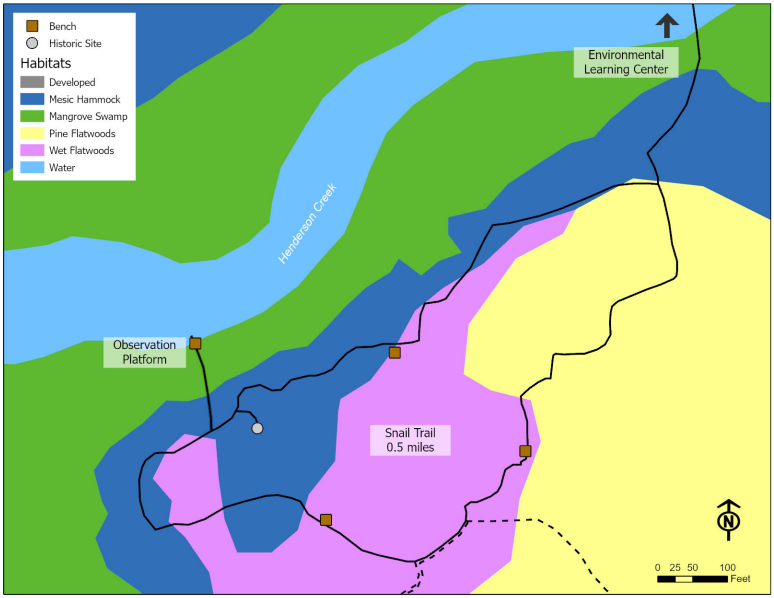
Snail Trail Self-Guided Hike
at Rookery Bay Research Reserve

Rookery Bay National Estuarine Research Reserve

Use this guide as you hike the Snail Trail to learn about several main habitats, history, and wildlife. Reference the numbers along trail for location and information. All plants, animals and artifacts are protected by law and should be left untouched. Please return this guide to Learning Center when finished. Species in **BOLD** are included in photo glossary.

Recommended supplies: Water and insect repellent, Field Guide or access to iNaturalist app on personal device.



Length: 1/2 mile round-trip

Average time: 30-45 minutes, depending on time spent observing plants and animals.

Difficulty level: Easy

SCAN ME

Scan the QR code to see what has been observed at the ELC and on our trails!

Habitats to explore

Water
The tidal waters of Henderson Creek vary in salinity with the tides and seasons. During the height of the wet season the water can get fresh and during the late dry season it does get salty, but it's usually brackish. Common animals include snook, mullet and Blue crab.

Mangrove swamp
Mangrove forests occur in coastal areas throughout the tropics. Typical plants include Red, Black, and White mangrove; also leather fern. Common animals include fiddler crabs, periwinkle snails and warblers.

Hammock
Hammocks are closed-canopy hardwood forests that grow in areas protected from fire. In Rookery Bay, both temperate and tropical plant species grow in hammocks. Typical trees include Live oak, Cabbage palm, Strangler fig, and Gumbo-limbo. The dense shrub layer includes species like myrsine, White stopper, cocoplum and wild coffee. Many migrating birds visit hammocks. Other common animals include Gray squirrels, racoons, and a variety of spiders.

Flatwoods
Flatwoods are characterized by an open canopy of pine trees. Regular fires maintain an open and diverse ground cover layer. In wet areas this usually consists of grasses, sedges and wildflowers, while in drier areas this layer is usually dominated by shrubs like Saw palmetto, staggerbush and gallberry. Common animals in this habitat include White-tailed deer, Red-bellied woodpeckers, and Northern mockingbirds.

Mixed Wetlands
This habitat is a transitional area between pine flatwoods and mangroves. Most of this area was formerly pine flatwoods, but the salty groundwater has started to kill many of these pines. Common plants include Dahoon holly, groundsel tree, cordgrass, and hempvine. Typical animals include Great egrets, raccoons, Eastern mosquitofish (during the wet season) and Northern mockingbirds.

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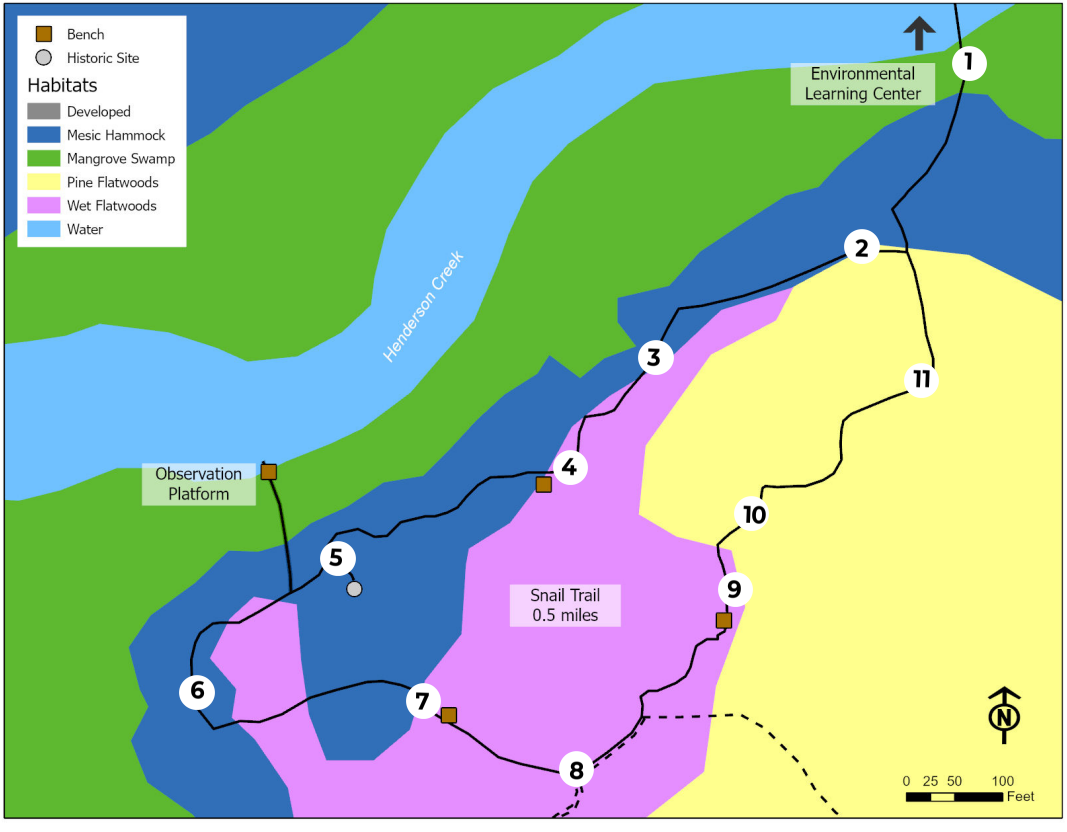


*A **MESIC** habitat is a type of habitat with a well-balanced supply of moisture throughout the growing season*

Henderson Creek

A tidal creek which eventually connects to the Gulf of Mexico. Henderson Creek is very interesting, because its salinity changes a lot throughout the year, and this means that the animals that can live here are different throughout the year. During the dry season, saltwater from the Gulf moves inland and saltwater fish species come here too. During the wet season, all the rainwater runs into Henderson Creek from the surrounding land and the water becomes almost fresh. It's not uncommon to see freshwater species like Softshell turtles, and gar here during the wet season and Bull sharks, manatees, and pinfish here during drier months.

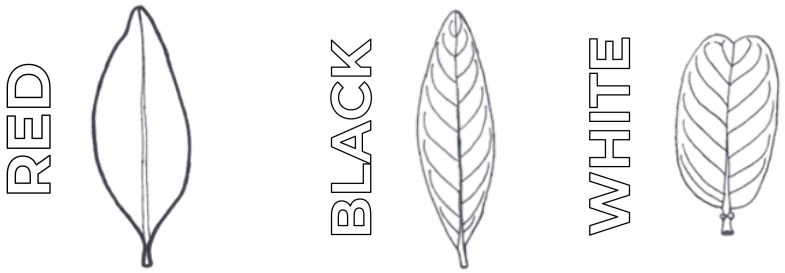
Mangrove Forests

Up ahead you have the unique opportunity to be close to a mangrove forest; part of the largest mangrove forest in the continental United States. These trees are so valuable to Florida's coastal communities, that they are protected by law. Mangrove forests provide a huge number of benefits to the surrounding wildlife and to humans. Many commercially important fish depend on the flooded mangrove forests as a nursery site. In fact, your favorite fish dinner probably started in the mangrove forest along Florida's coastline. These trees also provide important benefits to us by controlling coastal erosion and protecting water quality. The root system of the mangroves dampen wave energy thus reducing erosion and storm surge. These roots also capture nutrients thus enhancing water quality. Mangrove forests like that in front of you help reduce damage to coastal areas caused by hurricanes and severe storm events, an invaluable natural asset for coastal resilience. The canopy is a refuge for a wide variety of wildlife, most notably for the diversity of birds who seek out this corner of SWFL. Clearly these plants are an important part of Florida's natural heritage and offer critical ecosystem services. They certainly deserve our deepest appreciation and efforts of protection.

IMAGINE: A Florida without its' Mangroves

STOP 1

Look down! Depending on the tide, the trees surrounding you may very well be covered with water; brackish water! How is that possible? Mangroves are trees that can tolerate salty water and they are found throughout the tropics. Here in Florida we have three species of mangroves: red, white, and black. The **Red mangrove** grows closest to the water. You can identify it by looking for prop roots, or roots that look like stilts, which anchor it down in the muddy soil. **Black mangroves** grow inland from the red. It gets rid of excess salt by expelling it out on its leaves. If you lick a black mangrove leaf, it tastes salty. And finally we have the **White mangrove**. It usually grows the furthest inland and it is often the first mangrove to re-colonize an area after it has been disturbed. If you look at the end of a white mangrove leaf, it usually has a little divot.



LOOK FOR: The three different mangrove leaves

You may see **Golden leather fern** down in the understory, and **Mangrove rubber vine** growing from the mangroves. **Buttonwood** trees can also be seen among the mangroves in front of you. As you move further down on the bridge, notice how the habitat changes. You'll be moving away from the mangroves and more into upland (drier) habitats.

Trail-head

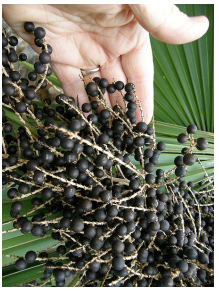
Pay close attention to the trail-head sign about dangerous wildlife. For your safety and the safety of our wildlife, be sure to stay on the trail. Remember, the animals can hear you long before you can see them, so be sure to keep your voices to a whisper to get the best wildlife viewing during your hike. Listen for some of the many species of birds found in the Reserve or the wind rustling palmetto fronds. Look for wildflowers along the trail but please do not pick them.

STOP 2

This cool-looking tree is a **Strangler fig**. Strangler figs produce fruit year-round and yes, you can eat the fruits of a Strangler fig! These fruits provide an all-you-can-eat buffet to birds and raccoons. These animals take the fig seeds and deposit them away from the parent tree. Sometimes these seeds are deposited on top of another tree. If that happens, the roots of the strangler fig grow down until they hit the soil. Then the Strangler fig sends down more and more roots until the host tree is completely surrounded (or strangled by the Strangler fig. Eventually the host tree dies and only the fig is left.

Before moving ahead, look at both sides of the trail. Do you see any differences in habitat between one side and the other? The side of the trail closest to Henderson Creek is hammock habitat. Just within sight of this sign, there are many different kinds of plants that produce delicious fruit throughout the year (**Cabbage palm**, **cocoplum**, stopper, myrsine.) **Live oaks** also produce a lot of calorie-rich acorns which are eaten by Black bears, squirrels, and all kinds of other animals. This hammock along Henderson Creek is dominated by live oak and Cabbage palm, but across the Reserve we have hammocks with all different kind of tree species. The other side of the trail is pine flatwoods habitat (**Slash pine** seen here). Unlike hammocks which are dense and shady, pine flatwoods are bright and sunny. The open pine canopy lets a lot of sunlight to reach the ground and allows for a very diverse understory layer to grow.

STOP 3



fruits

boots

This landscape is transitioning and what should become noticeable are the abundant Cabbage palms (sometimes called Cabbage palmetto or Sabal palm), the state tree of Florida. Even though this plant grows like a tree, palms are actually more closely related to grasses than they are to true trees, like pines or oaks. The name actually comes from the bud of the plant, which can be eaten like cabbage. This bud is edible but it doesn't have a lot of flavor. The berries are food source for a number of birds, bats, raccoon, and even black bear. This palm often hosts other plants in its "boots," including Strangler fig, **Fox grape, Virginia creeper**, and a variety of beautiful threatened and endangered ferns**.** This palm also shelters and supplies nesting material to birds, mammals, reptiles and a variety of insects.

LOOK FOR: Plants and animals in the palm "boots"

STOP 4

The looming oaks provide a beautiful scene. **Resurrection ferns** and **lichens** cover the branches among other epiphytic plants (plant that grows upon another plant or object merely for physical support). Depending on the time of year you may see some brown balls on the ground, or maybe some vines with heart shaped leaves. These are **air potatoes,** an invasive plant from Africa. But don't try to eat them. These "potatoes" actually contain several toxins! This plant is a big problem in the Reserve's uplands along with many other invasive plants and animals. In order to protect our native habitats, staff routinely remove invasive plants from areas around the Reserve, including this trail. Continuing ahead is a **mango tree.** Mangoes are not native to Florida, but unlike the air potato, they aren't really invasive either. So how did this mango tree get here? Journey up-ahead on the trail for some clues!

STOP 5

Between the 1880s and 1920s this area was the site of a homestead. Can you spot the large cement structure among the brush? This cistern collected rainwater and stored it so the people living here could have fresh water to drink. The first person to live here was a man named Ira Cross. He built a small house and grew some crops beginning around 1886. Around 1892, Ira Cross sold his land to the Kirkland family. The Kirklands grew crops here and sold some down on Marco Island. In 1908 Mr. J.J. Whitten of Henderson Creek (at this time) was contracted by the Lee Co. school board to row children from Henderson Creek school(Belle Meade) to Little Marco School at Shell Island. There were no roads here, so every day they would have to get in a boat and row two and a half miles to school. This was the first mention of school being responsible for transportation of pupils to school. Prior to that it was the responsibility of the parents.

Photos below: Bill Kirkland house on Henderson Creek & Reese Kirkland with wagon at Henderson Creek.

IMAGINE: Canoeing back and forth to school!

Across the trail from this cistern is a boardwalk that will lead you through the mangroves and out to Henderson Creek. Along the way you may see a tree with smooth reddish bark. This is a **Gumbo-limbo** tree, but sometimes people call it the "tourist tree" because it is red and peels like tourists with a bad sunburn. This tree is common throughout the Caribbean region and reaches its northern limit here in Florida. interesting fact about the Gumbo-limbo is that if you hug it and wait a couple of seconds, it may start to feel cool. This is because the smooth bark of the Gumbo-limbo transfers heat away from your body much better than the rough bark of other tree species. Go on and give it a try!

STOP 6

If you look on this oak tree, you may see a lot of **air plants.** These plants don't need to grow in the soil- they are able to get all the nutrients and moisture they need from the rain. Even though they're growing on this tree, they don't hurt it- they're only using it as a place to grow; they're not taking any nutrients out of it. These airplants are part of the bromeliad family, the same family that the pineapple comes from. We have 10 different species of bromeliads in Rookery Bay Reserve and many more are found throughout Florida and the tropics.

STOP 7

If you look closely, you may see some differences in the vegetation on each side of the trail. Both sides have an open pine canopy (flatwoods), but the understory (ground layer) may look a little different. The west side of the trail is wet pine flatwoods while the east side is slightly higher and drier. This small change in elevation makes all the difference though. Wet flatwoods often have standing water during the wet season, and the plant species that grow here have to be able to tolerate these saturated conditions. Common understory species include a variety of grasses, sedges, ferns, St. John's-worts and wetland shrubs. Wading birds like egrets, herons, and ibises will often forage for the small mosquitofish and crayfish that live here. Understory species of the slightly higher flatwoods include **Saw palmetto**, **gallberry**, **staggerbush**, and a variety of grasses and wildflowers.

Primitive Trail Access

The flatwoods in front of you are accessible by two primitive trails, both just half a mile in length. Follow the signs for Catbird loop or Slashpine loop, and please remember to stay on the trail. A map is provided at the end of this guide.

STOP 8

Before development, most of what is now Fort Myers was covered in pine flatwoods just like this. Naples had a lot of flatwoods too as did Marco Island ,but the highest areas were oak scrub (like you can see along Shell Island Road.) East of Airport Road the flatwoods gradually gave way to wetter areas of pine and cypress. Many different species of birds like to live in pine flatwoods like this. Red-bellied woodpeckers, cardinals, grackles, mockingbirds, and Mourning doves are common here throughout the year. In the winter they are joined by wintering birds, including catbirds and palm warblers. Nightjars, like Chuck-will's-widow and whip-poor-will, hide during the day but are active at night.

LISTEN and LOOK: For woodpeckers, song birds, and raptors

STOPS 9 and 10

Flanking both sides of the trail, a common understory plant throughout Florida is the Saw palmetto. It gets its name from the sharp "saw teeth" growing along the petiole, or leaf stem. These teeth can make patches of Saw palmetto really painful to walk through! Unlike other species of palms, the trunks of these usually lie flat against the ground. However, in some cases, palmetto trunks can grow upward (called "horsehead"), but we're still not entirely sure why they do this. In spring and summer, they produce a lot of tiny white flowers which produce a really sweet smell. Bees and other insects love these flowers, and honey made from palmetto flower nectar is commonly sold in Florida. As summer turns into fall, the pollinated flowers turn into berries. These berries provide an important source of food for deer, raccoons, birds, gopher tortoises, and black bears. Saw palmettos are also an important source of shelter for many species of wildlife, like Diamondback rattlesnakes. Panthers in particular often rest and raise kitten in palmetto patches because of the dense cover they provide.

Fire Management

Looking at the trees, do you see any evidence that something happened here recently? Pine trees are very well adapted to fire but hardwood trees aren't. Pine trees have thick bark which protects them from burning down, but fire ends up killing most hardwoods. All the lightning we get in SWFL produces a lot of fire, and those fires create large areas of open pine flatwoods. At Rookery Bay, we maintain our pinelands by doing prescribed burns (ideally once every 3-5 years), which mimics the natural fire ecology of the area. Without fire, these pine flatwoods would become invaded by hardwoods and would eventually become a hammock. You may have also seen a few burn marks on the palm trees in the hammock. Sometimes we try to burn the hammock, but because the hammock is so close to Henderson Creek, the ground is a little wetter and the fire never burns as well as it does in the flatwoods.

FEEL: The bark of the Slash pine tree

STOP 11

Look at the size of this pine tree! (It's actually over seven feet around and over two feet in diameter!) We don't know exactly how old this particular tree is, but given its diameter and the growth rate of other pine trees in the area, it's probably about 130 years old! Slash pines like these can live up to 200 years old. But this isn't even the biggest tree in Rookery Bay. The biggest Slash pine (that we know of) in the Reserve is over three feet in diameter and nine and a half feet in circumference! South Florida has its own variety of Slash pine (*Pinus elliottii* var. *densa*), which is very well adapted to fire. It has thick bark and long needles which keeps any flames away from the important parts of the tree. Young pines also store a lot of energy underground where it is safe from getting burned.

Red mangrove

White mangrove

Black mangrove

Mangrove rubber vine

Buttonwood

Golden leather fern

Giant leather fern

Strangler fig (on palm)

Cocoplum

Cabbage / Sabal palm

Slash pine

Virginia creeper

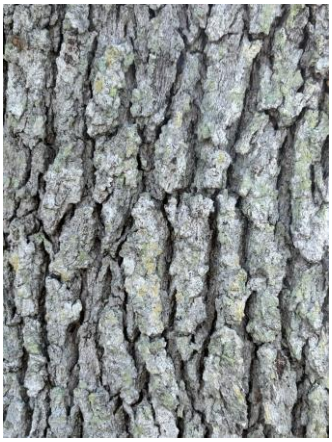
Coral bean

Toothed Rein Orchid

Smilax

Fox grape

American beauty berry


Southern live oak

Lichen

Spanish moss

Golden polypody fern

Mango

Shoestring fern


Gumbo-limbo


Resurrection fern

Butterfly orchid

Northern needleleaf

Cardinal plant

Ball moss

Gallberry

Staggerbush / Rusty lyonia

Wax myrtle

Saw palmetto

Air potato

Caesar weed

Rosary pea

Snake plant

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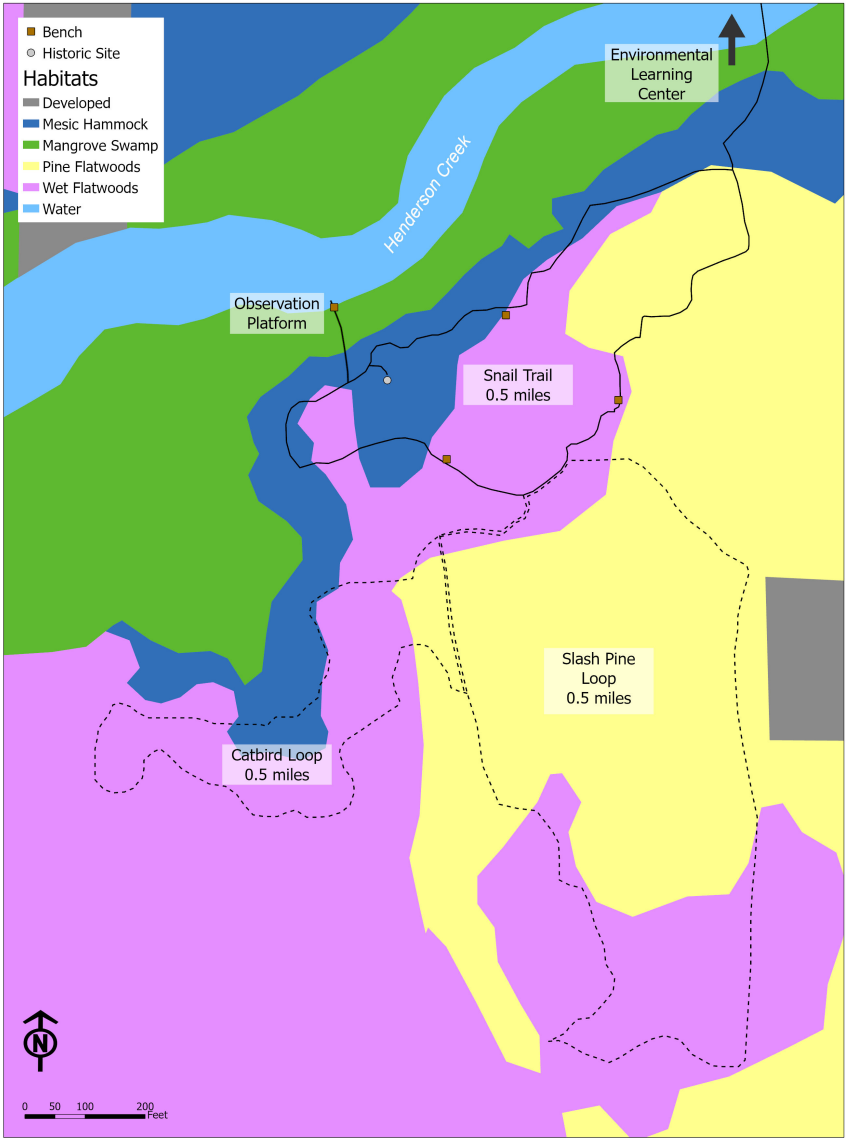
Full Trail System
at Environmental Learning Center

Rookery Bay National Estuarine Research Reserve



Length: All trails are one half mile each

Average time: 30-45 minutes per trail, depending on time spent observing plants and animals **Difficulty level:** Easy