

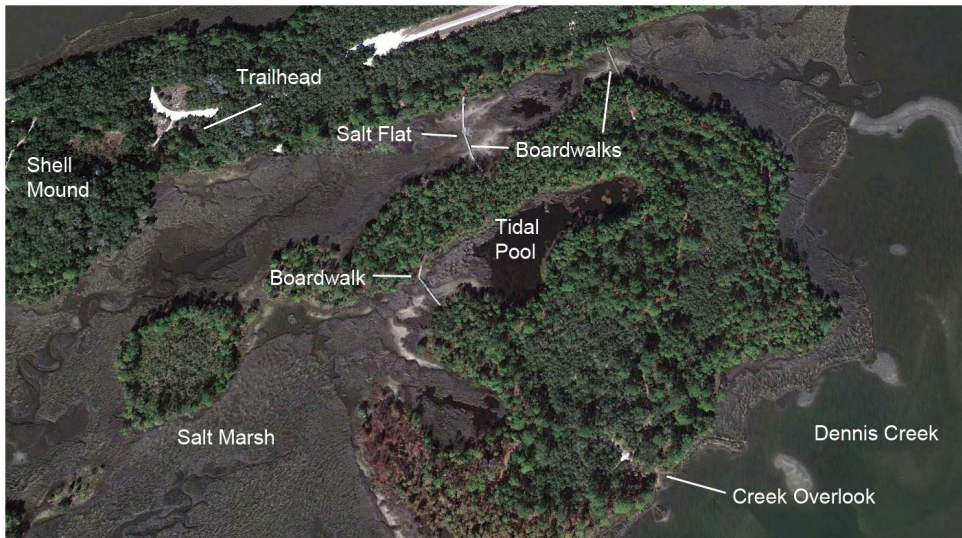
A Naturalist's Guide to the  
**Dennis Creek Trail**

Lower Suwannee National Wildlife Refuge

Shell Mound Unit



Sponsored and prepared by  
Friends of the Lower Suwannee  
and Cedar Keys  
National Wildlife Refuges



Satellite overview image of the trail. Hikers generally take the loop trail in a counter-clockwise direction, repeating a short section on the mainland.

## About the Friends of the Lower Suwannee and Cedar Keys National Wildlife Refuges

The Friends of the Lower Suwannee and Cedar Keys National Wildlife Refuges is a nonprofit organization of volunteers whose values mirror those of the National Wildlife Refuge System in favoring and advocating conservation of America's wild natural heritage. We are advocates for the refuges and the living resources they manage by supporting education, science, visitor interpretation, and wildlife-oriented recreation.

We hope you will enjoy this naturalist's guide and that you will come away from the trail with an appreciation for Florida's Big Bend region, the refuges, and their mission.

To learn more about us, and to join us if you wish, visit our website [www.friendsofrefuges.org](http://www.friendsofrefuges.org).

# The Dennis Creek Trail

As you enter the Shell Mound Unit of the Lower Suwannee National Wildlife Refuge, almost immediately on your left you will spot the Dennis Creek trailhead. Park there, and follow the trail.

In a little over a mile you can see nearly all the ecological features of the Gulf of Mexico coastline visible from land.

Entering the trail, the first thing you notice is that you immediately step down, and are about three feet lower than where you began. Is the place where you parked a natural formation or a man-made structure—this causeway could be either part of the ancient shell mound complex, or a recent construction. Look at Figure 1, below.



Figure 1. Satellite image showing Shell Mound and Dennis Creek . Note the causeway-like land projection that carries the mile-long section of Levy County Road 326 leading from the creek's upper reaches.

As you begin down the trail, leaving this apparent causeway your elevation has gone from about eleven feet to seven feet, and you are approaching the edge of the marsh. From this point on, the changes you see in kinds of plants and in landscape features will almost all result from slight changes in elevation.

For the first hundred yards, this trail section over not-quite-upland, not-quite-marsh passes through scrubby woods with cabbage palm (*Sabal palmetto*), eastern redcedar (*Juniperus virginiana*), slash pine (*Pinus elliotti*), and yaupon holly (*Ilex vomitoria*). On the left is higher ground, and the land to the right slopes gradually toward the marsh. Not normally regarded as wetland plants, all of the ones you see here can tolerate occasional flooding.

Reaching a long boardwalk leading to the right, your elevation will have taken you to about four feet above sea level. The average daily tidal range—the difference between the low and high tides—here is about three feet. The boardwalk leads over a tidal flat.



Figure 2. A tidal flat. The soil here is very salty because flooding is infrequent, and once flooded, the flat drains poorly and evaporation leaves salt behind. Note the dead cabbage palm at the left.

Once on the boardwalk, notice the sparse vegetation below. Patches of red are seen on close inspection to be tiny plants—plants with stems, and tiny leaves that look more like scales than true leaves. These are perennial glasswort (*Sarcocornia ambigua*), a species that tolerates places too salty for most other plants. In the distance on both the right and left are marsh grasses, but here where the boardwalk crosses has only sparse stands of glasswort and greenish, spreading saltwort (*Batis maritima*). At least some animals clearly thrive here, however, as dense herds of tiny fiddler crabs (one or more of several species of the genus *Uca*) are usually patrolling

the bare surface. Important components of the food chain, these little crabs subsist on particles of decaying plant matter. They in turn are eaten by larger animals. Their abundance provides one clue to the tremendous productivity of the marsh; for every pound of crabs, there are many tons of live and decaying vegetation.



Figure 3. View of the tidal flat with perennial glasswort (red patches), saltwort (greenish patches) in the foreground, and a stand of taller black needlerush in the background, beyond the the edge of the flat.

Leaving the boardwalk you cross a narrow area of dry land with relatively sparse vegetation and soon come to an observation platform overlooking a tidal pool. The view from the pool offers an opportunity to examine the transition between the land and the sea.

The tidal pool seen from the overlook has open water all the time. The water is generally salty, but may vary in salinity, based on the relative contributions of water it receives from the open Gulf, the Suwannee River, and local drainage.

Looking across the pool toward the land, in the foreground are greenish-yellow fringes of relatively short grass-like plants. This is smooth cordgrass (*Spartina alterniflora*). Yolerant of flooding, it is regularly flooded in the twice-daily tidal cycle. This species is the dominant seagrass along most of the Atlantic Coast, extending well into Canada. Behind it is black needlerush (*Juncus roemerianus*), taller, grayish, and appearing in thicker clumps than the cordgrass. Black needlerush is less tolerant of flooding than smooth cordgrass, and therefore tends to occur on sites that

are somewhat higher. Generally this species is found closer to land than smooth cordgrass, with needlerush covering most of the marsh, except for the narrow fringe of smooth cordgrass at the water's edge. Black needlerush is the dominant species of Big Bend salt marshes in terms of the area covered and importance to the ecology of the intertidal zone. Seen somewhat dimly in Figure 3 is a row of redcedars (*Juniperus virginiana*), shorter and darker than the slash pines (*Pinus elliottii*) behind them. Cabbage palms are extremely tolerant of flooding, and often they will be growing right at the edge of the salt marsh.



Figure 4. Tidal pool, a low spot in the marsh, with view of changing zones of vegetation in the transition from open water to land.

Leaving the overlook, you walk along the edge of the marsh and see some of the characteristic plants that thrive in the narrow zone between the land and the sea. In spots there is more saltwort, interspersed with an occasional glasswort. In a few places near the trail is a narrow band of saltgrass (*Distichlis spicata*), distinguished by its narrow stems and branched leaves. Saltwater falsewillow (*Baccharis angustifolia*), is a shrub with bright green, narrow, willow-like leaves. In the fall, it is apt to be covered by distinctive hairy seeds, which give a cotton-like appearance. Cabbage palms are frequent. Eastern redcedars late in the year may be festooned with many bluish juniper berries. Slash pines occupy the higher places along the borders of the marsh.

You reach another boardwalk that crosses a solid stand of black needlerush. The tidal

pool is in the distance to your left, and somewhere off to the right lies the Gulf of Mexico.

At the end of this boardwalk you reach an upland and pass under a canopy of low trees, mostly myrtle oak (*Quercus myrtifolia*), sand live oak (*Quercus geminata*), and cabbage palm, with occasional redbay (*Persea borbonia*). Shrubs present include gum bully (*Sideroxylon lanuginosum*), staggerbush (*Lyonia ferruginea*), yaupon holly, and saw palmetto (*Serenoa repens*). This is a maritime hammock—an area of higher ground surrounded by lower-lying marsh. This is a unique habitat that occurs in slightly different forms in the high-energy beaches of the Atlantic Coast where they may occur on the protected parts of barrier islands. Redcedars and slash pines often occur on the edges of these hammocks, while their interior areas are dominated by hardwoods. This gives them a distinctive appearance in aerial photographs (see Figure 1.), with the taller trees on their borders giving the impression that the inner areas are depressed.

Throughout the region these hammocks are gradually falling victim to rising sea level, and in time may migrate landward as the rising sea inundates low-lying areas. Cabbage palms are usually the last surviving trees before maritime hammocks are converted to salt marsh (see image of the dead cabbage palm in Figure 1, this one may be a victim of rising seas).



Figure 5. The maritime hammock. The vegetation here is similar to areas of coastal scrub found throughout the region, but differs from them in being largely protected from fire under natural conditions.

Unlike undisturbed maritime hammocks, this one has been subject to burning. On this hammock as elsewhere in the refuge, controlled fire is used here to maintain what on the mainland are thought to have been primeval conditions. One effect of occasional fires is to help ensure the persistence of economically valuable slash pines, which cannot reproduce in the shade produced by a heavy cover of deciduous plants. You will note as you walk along that one recent fire perhaps got too hot and destroyed some large trees, rather than simply clearing out low-growing plants. Fire is one more force that has produced what you are seeing here today. Most of the plants you see are somewhat tolerant of occasional flooding by saltwater and are also thriving here because they are tolerant of periodic fires. Perhaps the champion tree in both categories is cabbage palm--it—is almost impossible to kill a mature tree with fire, and it is the last tree species to go die when maritime hammocks are overcome by rising seas.



Figure 6. Fire damage in the maritime hammock. Even large hardwood trees were killed in this area, while some slash pines survived.

This hammock has protected by the refuge for decades, but one effect of human activity can be seen in the large skeleton of a slash pine tree just to the right as the trail turns slightly to the left. Note the scarring on the trunk, with a blackened surface and shallow v-shaped scars. These marks are the result of turpentine. Cuts were made in the bark to cause the tree to “bleed” resins, which were collected and distilled to make turpentine. As the cuts healed, new ones were made above them to ensure a continued flow of resins. Turpentine was an essential commodity product,





Figure 7. The dead slash pine tree to the right of the trail was once used in the production of turpentine. The bark was removed from one side of the lower trunk, and resins flowing into the cuts that normally would have repaired this wound were collected and refined into turpentine. Diagonal scars indicated by the white markers in the image are remnants of v-shaped cuts called “catfaces.” They guided the liquids into collecting vessels. Once cuts in the lower portions of trunks healed, new cuts above them were made to continue the flow of resins. This old tree survived the turpentine process and died relatively recently of unknown causes.

and harvesting pine sap was an important local source of revenue before use of refined petroleum products became widespread. Unlike the industrial harvesting of timber, turpentine was a way to get sustenance from pinelands without the need for equipment and infrastructure for transporting logs.

Following the trail a bit more, you come to the namesake Dennis Creek via a short side path. The two boardwalks you crossed did not take you over the creek, but



Figure 8. Dennis Creek, looking to the northeast from a point just off the loop trail that appears at one time to have been a landing.

instead over two sloughs that drain into the creek. These are flooded by high tides, but lack open channels. The entire trail remains on the west side of Dennis Creek. Seen from the bank here the creek is wide, and you look across a narrow band of marsh grass to another hammock, this one clearly demarked by a row of tall slash pines and an understory of redcedars. The creek is navigable by kayak from its mouth to the bridge on Route 326 if reasonable attention is paid to tides. It enters Suwannee Sound and the Gulf of Mexico just south of Shell Mound, and refuge lands extend from just below the bridge along both banks all the way to its mouth.

Returning to the loop trail, you continue through the hardwood hammock until reaching a boardwalk that again passes north of the tidal pool and again crosses the slough that you crossed earlier at the tidal flat. No new kinds of landscape features are encountered, but the return trip provides a good opportunity to view some of the plants and animals commonly seen in this mosaic of land and water environments. Plant life in the intertidal zone is not particularly diverse, but productivity is great, with the greatest contribution here coming from a single species, black needlerush. Most of its energy is not consumed directly, but serves at the basis of extensive food webs based on dead plant material consumed by small animals. The great production of food by these and other plants supports an extremely diverse array of animal species. The variety and numbers of birds is especially notable, but many of the important animals are unseen, either because of their small size or because they occur exclusively in the water column.

Samplings of plants and animals are found on the following pages.

There's far more to see, of course, but in your brief walk around the Dennis Creek Trail, you have seen much of the life of the intertidal zone of the Big Bend area. Still to come are the offshore oyster reefs and associated habitats of Suwannee sound, that inaccessible except by boat. Their abundance and diversity of life is significant and inspiring. Shell Mound is unique and worth its own guidebook, as are the offshore islands that continue to bear witness to the people who many thousands of years ago profited from the great abundance of this remarkable environment.



Fig. 9. Coontie (*Zamia floridana*)



Fig. 10. Gum Bully (*Sideroxylon* sp.)



Fig. 11. Sand Live Oak (*Q. geminata*)



Fig. 12. Myrtle Oak (*Q. myrtifolia*)



Fig. 13. Yaupon Holly (*Ilex vomitoria*)



Figure 14. Staggerbush (*Lyonia* sp.)



Figure 15. Horsemints (*Monarda* sp.)



Figure 16. Verbena (*Verbena* sp.)



Figure 17. Piggied Out? Diggings not far from Dennis Creek may result from exotic wild hogs (*Sus scrofa*) seeking turtle eggs.



Figure 18. Periwinkle snail (*Littorina irrorata*) on glasswort.



Figure 19. Large maritime hammocks may harbor populations of gopher tortoises (*Gopherus polyphemus*).



Figure 20. Cottonmouth (*Agkistrodon piscivorus*) snakes prefer freshwater, but may occur on hammocks.



Figure 21. Fiddler crabs (*Uca* spp.) are present in great numbers and very important in the food chain.

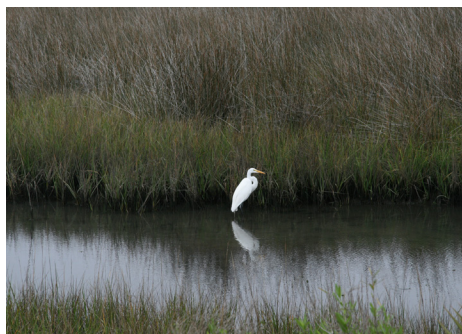


Figure 22. Great egret, one of many (family Ardeidae) wading bird species frequenting the Dennis Creek area.