



**Welcome to Apalachicola Bluffs and Ravines Preserve...** one of Florida's true natural treasures. This 6,294 acre preserve, owned and managed by The Nature Conservancy, protects a variety of natural communities including sandhill, slope forest, seepage stream, and massive exposed bluffs along the Apalachicola River. As you hike along the Garden of Eden trail, you will find numbered posts that correspond to the numbers in this guide. We hope this information helps you to better understand and appreciate this unique place.

### Trail Information

Trail length: 3.75 miles  
 Grade: 3,400 feet of trail is greater than 8% slope  
 Maximum grade: 63%  
 Difficulty: Strenuous

Surface: sand, hard-packed soil, wooden bridges. Bridges, slopes and leaves can be slippery after rain.  
 Obstacles: exposed tree roots, high steps, low limbs, angled cross slopes, drop offs.

### For your safety and enjoyment— Please follow these rules:

- Due to the fragile nature of the local soils, the trail is open to foot traffic only. Bicycles and horses are not allowed.
- Pets are not allowed.
- All plants, animals, and historical geological objects are protected. Collecting of any kind is not permitted.
- Visitors must stay off the bluff, climbing is dangerous and harmful to this natural feature.
- Hunting occurs in the area, bright clothing is advised during hunting season (Nov.-Feb.)

**1. Longleaf Pine and Wiregrass.** On the Garden of Eden Trail, you enter a globally rare landscape: a longleaf pine and wiregrass sandhill. The southeast United States was once nearly blanketed with over 90 million acres of longleaf pine from Virginia to south-central Florida and westward to Texas. Today, only about five percent of the original forest remains. The Nature Conservancy works throughout the southeastern coastal plain to protect this threatened ecosystem and the biodiversity within. For over 30 years, the staff at ABRP has worked to perfect the methodology and tools to restore the longleaf ecosystem. These “tools” have been exported to private and public partners across the range of longleaf, resulting in the restoration of tens of thousands of acres of forest.

**2. Restoration With Fire** One of the most important tools land managers have to restore and maintain southern pine habitats is prescribed fire. This critical ecological process has played an important role in the shaping of many plant and animal communities for eons. Land managers conduct prescribed fires to mimic fires that would have been started naturally by lightning every 1-3 years. Fire serves several important ecological functions such as recycling precious nutrients back to the soil, clearing understory, stimulating native plants to flower and fruit, suppression of non-native invasive species, and the reduction of hazardous fuel loads. Look for fire scars along the base of pine trees as you proceed.

**3. Slope Forest.** In the cooler climates of the ravines where the fires burn much less frequently the northern Florida slope forest can be found. The native canopy species include american beech, spruce pine, southern magnolia, sourwood, laurel oak, and red maple. The mid-story consists of numerous species including hophornbeam, muscledwood, horse sugar, and red bay. These slope forests are analogous to their northern relatives, Appalachian Cove Forests, where similar species are found. Fire is infrequent in these environments because of moisture, humidity, dense canopy and less flammable fuels.

**4. Paleoreugia.** During glacial periods in North America, Florida was much cooler on average. The regional flora and fauna were likewise cold-adapted and as continental temperatures warmed and glaciers re-

treated northward, these cold-adapted species began the slow migration back northward as well. However, many of these species with more northern affinities found a home in slope forests and steephead ravines of ABRP. The cooler, moister microclimate of the ravines was a perfect refuge for these glacial stragglers to survive amid Florida's increasingly subtropical weather. Species such as mountain laurel, Florida Torreya, and Apalachicola dusky salamander are a few examples.

**5. Steephead.** Listen carefully. At the base of this steephead you may hear the perennial trickle of a cool freshwater stream. Percolating through over one hundred and thirty feet of sand, this purified water is what causes steephead formation. Rain that falls upon the longleaf uplands seeps downward until it hits an impenetrable layer of clay or limestone. The water then turns sideways in its underground journey before bubbling forth as a small spring at the base of each steephead. As the water comes out of the ground it carries sand along with it and thus continues the steephead formation. This special type of erosion is called “sapping” erosion.

**6. Forest Gap Succession.** In a natural forest, older, damaged trees die and fall as part of the natural cycle. These openings, or areas of disturbance, leave gaps in the canopy that benefit the health and biodiversity of the forest by allowing new plants, or pioneer species, to gradually reclaim the sunlit space. Where a mighty oak once stood becomes home to grasses and forbs, then mid-story shrubs, and eventually canopy trees once again. Forest disturbance and subsequent succession creates a mosaic structure within the overall forest by adding micro-habitats and therefore greater biodiversity.

**7. Tornado Disturbance.** Like the forest gap seen at the last post, this is a disturbance of larger proportions – the aftermath of an F3 tornado that struck Kelly Branch in November of 2014. Random events such as this tornado do not often disrupt these ravines; however, notice already the species that are growing back in response to the now-abundant sunlight: Florida anise, sweet bay, gallberry, and spruce pine. You are witnessing a rare opportunity to observe the natural succession of a slope forest and ravine.

**8. Ravines.** From the steepheads east, several tributaries come together to form Kelly Branch, a perennially flowing freshwater stream that flows down this ravine and empties into the Apalachicola River. Here, in this crystal-clear water seepage stream, a variety of fish, invertebrates, and amphibians find refuge. These species add to the overall ecological diversity of the sandhill-ravine complex, and help make Florida's panhandle one of North America's five biodiversity hotspots.

**9. Stream Restoration.** From 1960-2006 a dam blocked this seepage stream forming an unnatural impoundment. In 2006, The Nature Conservancy decided to remove the dam and reshape the stream bank to its original form for the benefit of this aquatic ecosystem. Erosion control nets and native vegetation planted during restoration help stabilize the bank and prevent soil loss.

**10. Longleaf-Wiregrass Restoration.** In 2014, the open landscape you see before you was enclosed by hardwoods that had become unnaturally dense and large. In the wake of tornado damage, The Nature Conservancy began restoration on this site. Using a prescription of hardwood removal, prescribed fire, and wiregrass-longleaf planting, this once sparse opening is well on its way towards restoration. In 30 to 40 years this area will resemble the intact pine savanna seen at the beginning of this trail (posts 1 & 2).

**11. Fire Suppression and Hardwoods.** Compare the hardwood grove before you to the open, parklike expanse of pine savanna at your back. Hardwood encroachment in this upland site indicates long-term fire suppression. Hardwoods from the lower, wetter habitats (such as laurel oak, water oak and sweetgum) creep into the sandhill natural community when fire is absent. These species, combined with the naturally occurring upland hardwoods that become unnaturally dense and large with lack of fire cause the open landscape of the longleaf pine dominated sandhill to deteriorate into a hardwood "junk" hammock. Once a hardwood canopy is formed, fire-dependent species such as longleaf pine and wiregrass are quickly suppressed due to root competition and lack of sunlight. Notice the remnant longleaf trees hidden among this hardwood thicket: they are indicators of what this shady, fire-suppressed forest once was.

**12. Habitat Trees (Snags).** Nature finds life in all things: standing dead pine trees, or snags, are home to a variety of organisms. Insects, birds, small mammals and reptiles all find a place to live on a snag. Watch for nest cavities above that were dug out by our native woodpeckers. These cavities, in turn, provide shelter for other species, notably other birds that are unable to excavate cavities, such as bluebirds.

**13. Stages of Longleaf.** Longleaf pines are truly unique as compared to other southern pines in that they are specially adapted to withstand fire. In the grass stage, while the tree invests most of its energy to underground root development, the longleaf can survive the passing of flame due to the lengthy needles that insulate and protect the central bud. In the rocket stage, the longleaf shoots up above most moderate flame lengths. As the tree matures, its bark thickens for added protection.

**14. Gopher Tortoise.** A true "keystone species", gopher tortoises dig burrows up to 40 feet long that provide refuge to a multitude of amphibians, reptiles, birds, mammals and invertebrates. Species such as the eastern indigo snake, Florida pine snake, eastern diamondback rattlesnake, Florida mouse, gopher frog and a variety of unusual insects use these burrows to escape cold, fire, and predators.

**15. Sandhill Oaks.** Although longleaf pines are the iconic tree species of these savannas, upland oaks play an important role as well. Species such as the nearby turkey oak and others (blue jack, sand live oak and sand post oak) are found scattered throughout this habitat. These oak species produce excellent acorn crops, or mast, for the forest animals: deer, turkey, squirrel, and various birds depend on acorns at different times of year.

**16. Apalachicola Bluffs During the Civil War.** During the Civil War, these bluffs were strategic defense positions placed by Confederate troops to block Union naval ships from accessing the Apalachicola River. No shots were fired here; but many soldiers died – from malaria and yellow fever. The bluff occupation ended when the Confederate Army sank obstructions downriver to prevent Union ships from coming upstream.

**17. Floodplain Forests.** Directly across the Apalachicola River, and in stark contrast to the sandhills of ABRP, is a vast floodplain. The bottomland forest of the Apalachicola floodplain is composed of approximately 60 species of trees. Water hickory, sweetgum, overcup oak, green ash, and sugarberry grow in the areas of slightly higher elevation while the lower elevation areas are dominated by tupelo-cypress swamps. Unlike upland sandhill communities, floodplains rarely, if ever, feel the effects of natural fire. Rather, their cycles are determined by the disturbance regime of flood. Entirely different plant and animal species reside within this massive, swampy landscape.

**18. Sandhill Formation.** Where you stand now was once, millions of years ago, the edge of our continent. In the Mesozoic Era, when the Gulf of Mexico was much higher, crashing waves deposited many tons of sand at this location. As oceans receded, the land southward (formerly ocean floor) was left relatively flat, while the old shoreline (between here and Torreya State Park) stood 135 above. This ancient sand deposition is the origin of the special geologic feature (steephead ravines) that provides so much of the area's biodiversity.

**19. Florida Yew and Torreya.** Found deep within the ravines are two of North America's rarest tree species, the Florida Yew and Florida Torreya. In prehistoric times, these evergreens were more widespread, but due to habitat loss and infectious disease, these two species have seen drastic range reductions. Today, north Florida is one of the only places on Earth to boast the Florida yew, and ABRP together with Torreya State Park is the heart of the Torreya's global population.

**REMINDER—NO PETS ALLOWED!**  
Please **DON'T** try to navigate your way on the Preserve service roads. They rarely go where you think they should!

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## Apalachicola Bluffs and Ravines Preserve

### Garden of Eden Trail Guide



A preserve owned and managed by:

The Nature Conservancy 

Protecting nature. Preserving life.

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