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Take a Break in a "Brake"

Mother Nature provides us with a unique opportunity that soothes our souls and calms our busy lives. As you move from an urban setting and step into this century's old natural ecosystem, the Nature Trail Guide will take you on a self-guided tour and help you learn more about this incredible preserve. Numbered signs at each station along the trail correspond to the guide. Read each sign first, then the information in the guide. Please stay on the trails so as not to disturb the nature around you.

This tour takes you along the outer perimeter of the preserve on the one-half mile long Cypress Trail. A map of the preserve can be found on this website. Enjoy your visit.



2

Protecting History

During the 20th century, the bald cypress suffered the worst reduction in volume of any tree, except for the blight ravaged American chestnut. Harvesting was conducted well beyond sustainable limits and the once vast cypress brakes began to disappear.

In the 1930s this sixteen-acre tract, consisting of three stands of cypress trees in sloughs, a meadow, and mixed woodlands, was in danger of destruction by

encroaching urban development. In 1940 the Greenville Garden Club used funds from its Spring Garden Festival and donations from other sources to purchase the preserve for \$3,176.00. The club maintained the cypress preserve from 1940 until 2002 when it conveyed a conservation easement to the Greenville Cypress Preserve Trust. The trust obtained a 501 (c) (3) tax exempt status from the Internal Revenue Service.

Public interest in this conservation project has been so great that a group of supporters known as Friends of the Preserve has been formed. If you would like to know more about becoming a friend, please visit the Cypress Preserve website.

www.greenvillecypresspreserve.org

If you would like to donate to the preserve you may send your donation to:

Greenville Cypress Preserve
P.O. Box 4243
Greenville, MS 38704.



3

A Natural Garden

As you look out over the preserve, you will see a natural garden of native trees, plants, and wildflowers. Flowering plants that grow in the wild or on their own without cultivation are called wildflowers. Wildflowers indigenous to the area are called natives. Others, which may be quite common but not indigenous, have been introduced from another part of the world. They are referred

to as naturalized. Both types can reproduce and survive unaided in nature.

Around the pavilion visitors are welcomed each spring and early summer by a burst of colorful native wildflowers that have been planted from seeds. Walking through the woodlands and sloughs you will see others. Look at the sign and see how many wildflowers you can identify during your visit.

Notice wetland plants growing in the water or near the water's edge. As you learn more about these native plants, you will soon be wild about wildflowers!

- The **lizard's tail** gets its name from its flower stalk which somewhat resembles, that's right, the tail of a lizard! The flowers bloom in early summer and are quite fragrant. Long ago a poultice was made from its roots to treat wounds, and tea was made from its leaves to treat everything from rheumatism to stomach upsets.
- The **buttonbush** is easy to recognize because its flowers are clustered in white balls that look like a small round pincushion full of pins.
- **Rose mallow** and its cousin the cotton plant are members of the Malvaceae family which produce the largest flower of any perennial. Mallow flowers produce large amounts of nectar and are favorites of butterflies.
- The genus **Coreopsis** was designated the Mississippi state wildflower in 1991. You will see the annual plains *Coreopsis* and the perennial lance-leaf *Coreopsis* in the spring and/or summer in the preserve.



Enjoy the Preserve

The preserve gives visitors the chance to see wildlife in its natural habitat. The animals are sometimes hard to find but your chances of spotting them will greatly increase if you

- are as quiet as possible.
- walk slowly.
- watch and listen for movement.
- keep your eyes and head moving in all directions.
- stand or sit still for a few minutes.
- take time to look at ordinary things...
and don't forget your binoculars and bug spray!

As you tour the preserve, please stay on the trails.

Turn to the right onto the Meadow Trail and continue toward the boardwalk over the slough.



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Wonders of Wetlands

As you approach the boardwalk, pause, and look around at the majesty of the stately bald cypress trees. You may see a graceful white egret enjoying the preserve, and you will hear delightful sounds of birds, bullfrogs, and locusts. You may just have to whisper, "Wow!"

In answer to the question posed on the sign, the preserve is a forested swamp. It is a wetland dominated by woody plants and characterized by saturated soil during the growing season and standing water during certain times of the year. The highly organic soils of swamps form a thick, black, nutrient rich environment for the growth of water tolerant trees such as the bald cypress. The water level of the preserve depends on the level of the Mississippi River and the amount of rainfall. At times the swamp is almost dry and at other times water may cover the boardwalks.

Due to the rich soils present in swamps, many of these fertile woodlands have been drained and cleared for agriculture and other development. Over 70 percent of the nation's floodplain forested swamps have been lost. The Greenville Cypress Preserve Trust is dedicated to the preservation and conservation of this true wetland.



6

What is that Green (or Red) Stuff?

Besides being an important high protein food source for ducks, geese, snails, turtles and beavers, duckweed also serves as shelter and shade for bullfrogs, snakes, and fish.

Other interesting facts about duckweed include:

- Duckweed produces 10 times as much protein per acre as a soybean field.

- People in Southeast Asia include duckweed in their diet.
- Japanese secret spies, Ninjas, used to swim under blankets of duckweed to conceal their movement.
- Because of its fast growth rate, researchers around the world are studying duckweed as a possible source of clean energy.
- A cover of duckweed may play a role in water conservation by reducing loss due to evaporation.

In the fall and winter, you may see "red stuff" on the surface of the water. It is called mosquito fern which may have gotten its name from the myth that mosquitoes cannot penetrate the dense mass of fronds to lay their eggs. Mosquito ferns are rich in proteins, essential amino acids, vitamins, and minerals. It is easy to cultivate and therefore is grown in many parts of the world. When used as a supplement in livestock feed, reports indicate increased production of milk from dairy cows and eggs from ducks and chickens.



7

Botany of the Preserve

It is a unique experience to pass through three ecosystems in an urban setting. Your walk began in a meadow, continued through a wetland and now you are in a woodland area. The native plants all around you have evolved over thousands of years. Many of these Mississippi native plants are wise choices for personal gardens because they are better adapted to the Delta soil and

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climate, provide food, and shelter for our wildlife and require less maintenance than exotic species.

How many of the plants pictured on the sign can you find in the woods? While you are searching for them you may enjoy a few facts:

- The **sweet gum** is easily recognized by its star shaped leaves and woody, spiny ball shaped fruit. Pioneers once peeled the bark and scraped the resin-like solid to produce chewing gum.
- The seeds and young shoots of the **red buck-eye** are poisonous if ingested, and American Indians crushed these parts and put them in water to stupefy fish for easy capture.
- The bark of the **sugarberry** also known as a **hackberry** with its wart-like bumps makes it easy to identify. Its berries secrete a sweet sticky substance in the fall that attracts millions of mealy bugs. The mealy bugs engorge themselves with the secretions and produce a dew of saccharine sweetness known as ghost rain or honeydew.
- All parts of the **sassafras tree** are very fragrant, and the bark on young trees is bright green. It is unusual because it has three distinct leaf patterns on the same plant: oval, mitten-shaped and three lobed. Several are located by the entrance to the Bob Gramling Observation Deck.
- Did you know that the leaves of the **beautyberry** were used as a mosquito repellent by American Indians? The leaves, when rubbed onto the skin safely and effectively repel mosquitoes, fleas, ticks and other annoying and biting insects.
- In the fall of the year, try to find a **boxelder maple tree** (one is located near sign number 11).

When the flat pear-shaped fruit dries, it will fall to the ground. Pick one up, hold it high over your head and let it fall...it will spin like a helicopter!



8

Let's Go Bird Watching

Bird watching is the second largest hobby in North America with gardening as the first. Just twenty miles from the preserve at Leroy Percy State Park and Theodore Roosevelt National Wildlife Refuge more bird species were identified in 1993 during a National Audubon Society's Washington County Christmas Bird Count than at any other inland location in North America according to U.S. Fish and Wildlife Service. This is due in part to the fact that we are on one of North America's major flyways.

Did you know?

- The **great egret** has all white plumage and may be best known as the symbol of the National Audubon Society. It feeds in shallow water on fish, frogs, small mammals, small birds and reptiles and spears its prey with its long, sharp bill. Great egrets can live 20 years or more.
- The **prothonotary warbler** is a neo-tropical migratory songbird that comes to Mississippi in the spring to nest, then migrates back to South America for the winter. Because of its bright yellow color, it is sometimes called the swamp canary.

- The **northern mockingbird** is the only mockingbird commonly found in North America. It is Mississippi's state bird and can imitate (or mock) other bird and animal sounds as well as mechanical sounds such as car alarms.



9

Providing Wildlife Habitat

The preserve offers a variety of habitats for many plants and animals. Naturalists, birders, and hunters are drawn to stands of bald cypress for the habitat which supports songbirds, wild turkeys, wood ducks and other waterfowl. The canopy overhead provides nesting areas for herons and egrets, as well as hawks, Mississippi kites, eagles, and osprey. The buttresses of the cypress tree and the 'knees' host populations of tree frogs, salamanders and other amphibians, while the murky waters below provide habitat for fish and reptiles.

Native plants and wildlife go hand in hand. Many plants and animals have evolved together and are dependent upon one another for survival. Plants provide animals with food, nesting sites, cover, and protection from the elements. While on their quest for food or shelter, animals and insects oftentimes aid in the pollination of flowers and the dispersal of their seeds.

The berries, nuts and minnows pictured on the sign provide some of the food sources for local animals living in the preserve. A **raccoon**, for one, will eat all of those. In fact, he will eat just about anything! He uses his lightning quick paws to grab crawfish, frogs, and other aquatic creatures. On land, he will pluck mice and

insects from their hiding places and raid nests for tasty eggs. He is equally easy to please when it comes to shelter, as he is comfortable in a tree hole, fallen log or even your attic!

Rabbits love living in the preserve because it provides them with plentiful plants, bark, and berries to eat. Since they require up to four hours of exercise daily and can run 35 miles an hour, they have plenty of space to hop through the preserve. And, yes, they love calling the briar patch home!

Continue the trail staying to the right.



10

Bob Gramling Observation Deck

The observation deck was completed in 2010 in memory of Bob Gramling, one of the original members of the Cypress Preserve Trust.

From the deck you can see the tallest bald cypress tree in the preserve. As you enter the deck, look to your right, and you will see what appears to be a tree with a double trunk but is actually two trees that are growing very close together. The tallest tree is the one to the right. It is over 128 feet tall and is estimated to be 125 years old.

Leave the deck and turn to your right.



11

Keeping Track of the Animals

Tracking animals is the art of using clues in an environment to discover and identify which animals are present in the habitat. Even if you do not see any today, you may find signs of them. Look for animal tracks in mud, soft soil, or snow near the water's edge. If you see any tracks, refer to the sign and see if you can identify the animal by its footprint since shape, size, and track patterns will be unique for each animal.

Look for animal droppings, also called scat or poop. If you see scat that is still slightly moist it means that the animal was in the area recently. Bent grasses, pieces of fur or feathers on the ground or stuck to trees, nibbled buds of trees and empty acorn shells are other signs to note.

While you are looking down, look for crawfish chimneys like the one pictured on the sign. Everywhere you see a chimney there is a crawfish living in a burrow underneath. Their tunnels may extend down into the earth three feet or more and are normally full of water. Are you wondering how crawfish can breathe submerged in water? They have gills like fish and get their oxygen from the water.

Have you guessed who lives in the hole in the tree pictured on the sign? If you guessed a woodpecker, then you are correct. However, many other birds and

mammals will compete with the woodpecker for the nest. Woodpeckers tap an estimated 8,000 to 12,000 times per day and may take as long as a month to peck out a nest.



12

Dead Trees are Full of Life

Dead trees provide vital habitats for more than 1,000 species of wildlife across the nation. Dead trees, which are often broken and upright, are called snags. They provide homes for mammals such as squirrels, deer mice, raccoons, and bats by providing food, shelter, and nesting places. Butterflies, amphibians, and reptiles are fond of dead trees as well. Over 85 species of birds including wood ducks and owls also nest in this upright habitat. Do you see a snag in this area?

When a snag eventually falls over, it may provide dens for larger mammals such as foxes, bobcats, skunks, and opossums. Take a moment to look around the area. How many dead trees can you count? How many different lichens, mosses or mushrooms that cover many of the fallen trees can you see? Look even closer to find insects, beetles and other living creatures that make a home in these decaying logs.

Can you find a tree that once had a vine wrapped around it that changed its shape?



13

A Duck in a Tree?

Male wood ducks, called drakes, are considered among the most beautiful waterfowl in North America because they wear a rainbow of colors! The female hen on the other hand is mostly brown. Note their picture on the sign especially their clawed toes which enable them to cling to branches in nesting trees.

Female wood ducks lay their eggs in a tree cavity or nest box and will return to the same nest year after year. About 24 hours after the eggs hatch, mother wood ducks call to their young and beckon them down to the water or soft soil where they may be safer from predators. They can jump from very high nesting sites (as high as 65 feet) without injury. Ducklings can swim and find food, which consists of small invertebrates and small fish. As they get older, they begin to eat berries, seeds and insects.

The "tree duck" population was in serious decline in the late 19th century because of severe habitat loss and market hunting, both for the meat and the plumage for the ladies' hat market in Europe. By ending unregulated hunting and taking measures to protect remaining habitats, wood duck populations began to rebound in the 1920s. In the 1930s, the development of artificial nesting boxes, such as the one you can see near this sign, gave an additional boost to the wood duck population.

**After you cross the boardwalk, turn to your right.
Look to your left in the meadow and locate the
bluebird box.**



14

Home, Sweet Home!

(There is not a sign for this station.)

The bluebird box with the number **14** on it is one of several that have been placed throughout the preserve hoping to attract the **eastern bluebird**. The population of this beautiful bird declined seriously enough in the past century to reach critical status by the mid-1900s. The decline was due to habitat destruction and nest predation. The species was rescued by a network of birding enthusiasts throughout the United States who erected nesting boxes for them.

Adult males are bright blue on top and have a reddish brown throat and breast. Bluebirds prefer living on the edge of a forest and nest four to five feet off the ground. The hole in the nesting box must be no larger than an inch and a half in diameter to prevent starlings, cowbirds, and house sparrows from entering and eating their young.

The wood duck boxes throughout the preserve are much larger than the bluebird boxes. Overall box size, diameter of the hole, height from the ground and placement in the habitat determine which species of bird will or will not nest there.



15

The Invaders

Exotic, also called non-native or non-indigenous, plants have been introduced to an environment in which they did not evolve but are able to reproduce and spread in their new home. They can be any type of plant: a tree, vine, shrub, or grass. Almost 20 percent of the plant species in Mississippi forests, parks, refuges, and other open spaces are not native to our state.

Once established, many exotics crowd out native plants and animals, alter ecosystems, threaten endangered native species, cause disease, and interfere with human activities including agriculture, industry, and recreation. These plants are known as exotic invasives. Billions of dollars are spent worldwide each year to fight the spread of exotic invasive plants in both agricultural land and natural areas.

Look across the area in front of you to the edge of the neighboring property, and you will see a tall bamboo thicket which has replaced the native plants that once grew there.

You may also find other exotic invasive plants in the preserve that are not on the sign.

- The **Chinese tallow tree** has beautiful red and orange fall color but its small white popcorn ball fruit germinates and readily takes over wetlands.
- The **Chinese wisteria** vine has beautiful clusters of fragrant purple spring flowers but can

quickly destroy native habitats with its rapid growth.

- **Japanese euonymus** vine produces attractive red berries in the fall that are eagerly eaten and spread by birds. However, the vine forms a thick ground cover that smothers trees and shrubs.



16

Greenville Floods: The Big Ones

Please note the Flood Marker near sign number **16**. The colored lines on the marker correspond to the flood levels mentioned on the sign.

The Mississippi River flood of 1927 was the most destructive in the history of the United States and the greatest disaster ever to hit the Mississippi Delta. Heavy rains pounded the upper United States in the summer of 1926 causing the tributaries that feed the Mississippi River to fill to near capacity. On April 21, 1927, the Mississippi River, swollen by recent rains and engorged tributaries, burst through the levee at Mounds Landing north of Greenville. In Mississippi alone, an area 50 miles wide and more than 100 miles long was flooded with water reaching a depth of up to 30 feet in some areas. To tour the Greenville 1927 Flood Museum, call Sandy McIntire at 662-820-1474.

In April and May 2011, Greenvillians again watched anxiously as the Mississippi River rose daily. On May 17,

2011, the river level crested just below the 1927 level. Fortunately, the much higher, stronger levee kept the land side of Greenville dry as it did in other high-water years – 1937, 1973 and 2008. Structures on the water-side of the levee, however, were submerged under more than 20 feet of water. Sign number 16 shows the five highest maximum river levels in relation to the current 35-foot levee and the preserve's south GPS marker.

While the devastation that occurred in 1927 will always be remembered, we often forget that before the levees were built, excessive spring rains and melting snow would often fill the Mississippi River past capacity and cause frequent flooding. These spring floods would bring nutrient rich sediment and water across the flood plain we call the Delta.

The Delta is home to naturally occurring bottomland hardwood forest and brakes such as the Cypress Preserve. While no longer flooded by the Mississippi River these unique habitats still experience flooded conditions during most springs. Native plants and wildlife found in these low-lying flood prone areas are adapted to such conditions and can survive.



17

The Champ

(There is not a sign for this station.)

Before you get to the three benches, look to your right, and find number **17** near a large bald cypress tree. You are looking at the current 'Greenville Cypress Preserve Champion Bald Cypress Tree.' In the east slough by the

observation deck, you saw the tallest bald cypress tree in the preserve. However, the tallest tree may not necessarily be the area's 'champion' tree. A champion tree earns its designation by using an index based on the height, circumference and crown spread of the tree. The index is calculated as one point for each inch of circumference, one point for each foot of height, and 0.25 of a point for each foot of crown spread. The preserve's champion tree has a circumference of 17.7 feet (at 4.5 feet above ground line), is 98 feet tall, and has an average crown spread of 59.4 feet giving it an index value of 325.25. The current Mississippi State and National Champion bald cypress is in Holmes County and has an index value of 758.13.

Other large trees in the preserve average between 120 to 124 feet tall with a circumference of 14 to 16 feet.



18

The Giving Tree

(There is not a sign for this station.)

On your left you will notice three benches with the number **18** on one of them. Please have a seat and read their story. The cypress benches that you see throughout the preserve were made from an 85-year-old bald cypress tree that fell here during a storm in May of 2009. The seats were crafted from the trunk of the huge tree and the "legs" were made from the trunks of cypress trees obtained from a mill in Arkansas. As you walk closer to Cypress Lane you can see the remains of the tree that "gave" us the benches.

Cypress wood has many uses. Cypress heartwood is slow to decay and is insect resistant. It is an ideal choice for house construction, docks, beams, decks, flooring, paneling, and siding. The ancient Egyptians used cypress to produce the pharaohs' caskets, and in the Middle Ages, craftsmen used it to carve enormous cathedral doors.

Without the natural cycles of destruction and regrowth that occur in nature, the creation of these benches would not have been possible.



19

Wetland Critters

As you look out over the slough in front of you, you are looking at the home of many kinds of plants and animals. In fact, you can find more animals and plants per acre in a wetland than in any other kind of habitat.

With so many species of plants and animals, there must be enough food for them to eat. Read about the Food Web on the sign, and you will see how it all works. The dead plants break down, providing food for the insects, shellfish, and small fish which in turn feed larger fish, reptiles, amphibians, birds, and mammals.

- The aquatic turtles, **red-eared sliders**, are very strong swimmers and will most likely be seen basking on logs above the water. They get their name from the red stripe that is present on either side of their head.

- Even though the non-venomous **mud snakes** have a beautiful red and black checkerboard pattern, they are seldom seen because of their secretive habits. Large females may lay over 100 eggs, however, the average clutch size is probably closer to 20–30 eggs.
- The **American mink** with his slightly webbed feet and waterproof coat spends a lot of his time hunting food in the water but also eats rabbits, mice, snakes and birds. Sadly, it takes about fifty of these creatures to make one fur coat.



20

Why is a Bald Cypress Bald?

Some botanists say that the bald cypress tree is called 'bald' because it drops its needles in the fall. Others say that it is bald to distinguish it from the evergreen cypresses in other parts of the world while others think it is because in old age the top of the tree is sometimes blown out by storms, leaving it open and 'bald' on top. Regardless of which you believe, the bald cypress is the only southern conifer (cone bearing tree) that is deciduous (loses its leaves in the fall). Each autumn its leaves turn golden brown and are shed, along with most of the smaller twigs. It is native to the southeastern United States and can reach 100 to 150 feet in height.

The bald cypress is best known for its 'knees' which emerge like conical projections through the soil or out of the water surrounding the tree. These knees are believed to help stabilize the tree in soft wet or muddy soils although there is some scientific conjecture that sug-

gests the knees also help in the exchange of oxygen and carbon dioxide for the constantly submerged roots.

Bald cypress trees are monoecious which simply means that they can produce separate male and female flowers (or cones) on the same tree. Both types of flower buds appear on the tree beginning in early fall and mature in mid-spring. The male flowers (staminate) are slender purple tassels that hang downward. Female cones appear near the end of the twigs on the previous year's growth.

Beginning in March, the male flowers release an abundant supply of yellow pollen into the air, pollinating the nearby female cones. The cones continue to grow and the seeds within ripen throughout the summer, while the strands of male flowers turn brown and often fall from the tree. In October the mature cones change from green to brownish purple before dropping from the tree. Can you determine which stage the reproductive cycle is in now?

When a cone falls into the swamp, the murky water breaks down the tough exterior and the seeds are released. The seeds can then be eaten by squirrels, wild turkeys, and wood ducks. In the early 1900s, the Carolina Parakeet, a colorful dove-sized bird with a hooked bill strong enough to open the cones, helped disperse the seed. These beautiful parakeets became extinct due to farmers protecting their crops and individuals killing the birds for feathers to adorn ladies' hats.



21

Water, Water Everywhere

Most land areas on earth have some form of water below them. Some rocks of the upper part of the earth's crust contain many small holes or pores. When these holes are large or are joined together so that water can flow through them easily, the rock is permeable. Sandstone and gravel are examples of permeable rock.

A large body of permeable rock in which water is stored and flows through is called an aquifer. Water from within the aquifer moves slowly toward lower lying places and eventually is discharged to springs, seeps into streams or is withdrawn from the ground by wells. Wells drilled into aquifers provide about 60 percent of American drinking water and are also a source of water for agricultural use.

You may notice that the water level at the Cypress Preserve is always changing. When the topsoil in an area becomes saturated with rainwater, the low-lying regions such as the sloughs in the preserve fill with the excess water. When the Mississippi River is high for extended periods of time, seepage from the river also saturates the nearby topsoil layer which in turn causes the sloughs to fill with water.



22

Holt Collier's First Bear

Holt Collier was born in 1846 into a family of slaves serving on a plantation near Natchez. At an early age, Collier moved with his family up the Mississippi River to Plum Ridge Plantation in Washington County, Mississippi about a mile east of the Greenville Cypress Preserve. Collier became proficient in riding horses, marksmanship and hunting all types of wildlife, particularly the black bear. At the age of ten, while hunting with General Howell Hinds, Collier killed his first bear very close to the preserve.

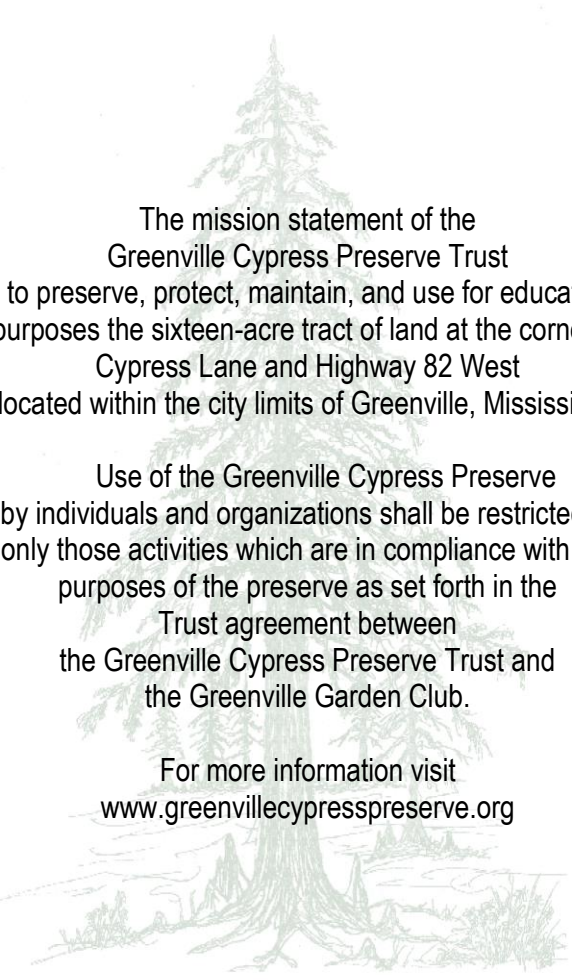
Following the Civil War, and after emancipation, Collier remained with the Hinds family on Plum Ridge Plantation. He established his reputation as a skillful hunter and black bear hunting guide in the Mississippi Delta. In 1902, Collier was hired to guide a hunting party with President Theodore Roosevelt, and he tethered a bear to a tree for the President who refused to shoot it. Cartoonists later popularized the event, from whence came the toy known as the "Teddy Bear."

Holt Collier died in 1936 in Greenville, Mississippi and was buried in Live Oak Cemetery. He is known throughout the Mississippi Delta and the state of Mississippi as the greatest bear hunter of all time!

You have completed the self-guided tour.
We hope it has been educational and inspirational.

Please be so kind as to:

- report wildlife sightings to:
Sightings@greenvillecypresspreserve.org
- help keep the preserve clean



The mission statement of the
Greenville Cypress Preserve Trust
is to preserve, protect, maintain, and use for educational
purposes the sixteen-acre tract of land at the corner of
Cypress Lane and Highway 82 West
located within the city limits of Greenville, Mississippi.

Use of the Greenville Cypress Preserve
by individuals and organizations shall be restricted to
only those activities which are in compliance with the
purposes of the preserve as set forth in the
Trust agreement between
the Greenville Cypress Preserve Trust and
the Greenville Garden Club.

For more information visit
www.greenvillecypresspreserve.org

“Look deep in nature
and then you will
understand everything
better.”

Albert Einstein



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