

*Cababa prairie-clover*



# Bibb County GLADES

*Botanical Discovery of the Century*

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*Lobed-leaved Brown-eyed Susan*

The landscape before me is arid with little evidence of life. Plants are sparse, with rock and bare soil the dominant landform. Water comes at a premium in this harsh land, where trees and woody plants fail to grow. The only plant life is scattered forbs and grasses that have adapted to this harsh environment. I've journeyed to this land in search of one of the rarest plants on earth. But wait a minute! I'm not on a safari to the Serengeti. It's my lunch break and I'm visiting the Bibb County Glades in Alabama. As a biologist for the Cahaba River National Wildlife Refuge, the glades are our next-door neighbor. Few people are aware this "lost world" exists in our own back yard.

## **Ketona Glades**

The story of these remarkable glades is a cross between a detective novel and a scientific investigation. While the glades have existed for thousands of years, they were overlooked by man until discovered by accident in 1992. While canoeing the Little Cahaba River, Georgia botanist Jim Allison climbed the steep riverbank to an open rocky meadow above the river. The treeless barren turned out to be a limestone glade, but one differing from any he had seen before. Eventually over 60 rare plants were discovered within the glades and surrounding lands in central Bibb County. The most remarkable part of the story, however, was the discovery and naming of eight plants new to science. Such a discovery might be expected in the remote Amazon Rain Forest, but was unheard of in North America. Research scientists have described this event as the most unique botanical discovery in the continental United States during the last 100 years. The naming of eight new plants within such a small area and at a single time is unparalleled in recent history.

As these glades were further studied, elevated levels of magnesium in the Ketona Formation underlying the glades

were credited for the presence of so many rare and unique plants. The Ketona Formation contains a remarkably pure form of dolomite that is crystalline in texture and comparatively free of siliceous impurities. Eventually, 40 sites, ranging from small rock outcrops to 12-acre glades, were discovered and identified in central Bibb County. All were located within an 11-mile strip that totaled fewer than 250 acres of actual glades.

## **Protection and Preservation**

Public response to these discoveries was overwhelming, with The Nature Conservancy purchasing some of the larger glades and creating the Bibb County Glades Preserve in 1996. Within their 480-acre preserve, almost half of all the glades are now protected. Further actions to protect the region's fragile natural resources were accomplished in 2003 with creation of the adjacent Cahaba River National Wildlife Refuge. Together, the U.S. Fish and Wildlife Service and The Nature Conservancy are continuing efforts to expand the refuge and protect additional lands for the benefit of future generations.

With dozens of rare aquatic mussels, snails and fish in the Cahaba and Little Cahaba Rivers, and a unique upland flora above the rivers, this part of Bibb County is recognized as the most biologically diverse piece of real estate in the State of Alabama. Bibb County in general has been credited with supporting the most significant diversity of plant species in the southeastern United States.

The creation of the refuge has also provided protection for one of the largest populations of rocky-shoal spider lilies in the world. These rare and specialized lilies form expansive populations within the shallow rocky shoals of the Cahaba River. While they once occurred on many free-flowing rivers across the Southeast, they have disappeared from much of the landscape as rivers were dammed and impounded. Today, fewer than 200 acres of rocky-shoals lily remain in the world, with the Cahaba River and refuge holding one

of the two largest populations. Locally referred to as the Cahaba Lily, the beauty of the flowering shoals has spawned the Cahaba Lily Festival. During the annual May festival, visitors can learn about the lily shoals and visit the refuge, walking or canoeing amidst the beauty of flowering lilies.

## **Why Such Diversity?**

There is little doubt that Ketona dolomite outcrops are responsible for much of the region's unique plant diversity. Additionally, the boundary of two physiographic provinces, the Ridge and Valley and Coastal Plain, also contribute an intermingling of species from both the north and south. However, another factor often overlooked is the rural and undeveloped character of the county. While much of the surrounding region has experienced development and industrialization, Bibb County continues to retain much of its rural landscape. While the glades provide few enticements to local farmers, they do provide a high quality flux for iron and steel making furnaces. In all probability, the remoteness of Bibb County is largely responsible for survival of these glades in this forgotten corner of Alabama.

## **Why Only on the Glades?**

The world is a competitive place. Empty space and bare ground can be viewed as a new land with pioneers eyeing an opportunity for a better life. Plants, like early settlers, adapt to new conditions in order to survive and raise families. Unlike man, who draws on cultural and technical innovations to succeed in the new land, plants must physically adapt through genetic change to survive in this environment.

In the Ketona glades, these adaptations require plants to tolerate new soil chemistry and extreme dryness. Such genetic change can easily require thousands of years to produce a plant that is equipped to survive. Those that adapt to the environment are responsible for producing future successful generations. Those that fail to change are doomed to extinction or relegated to surrounding more hospitable lands. Over time, some species change so dramatically that they have little in common with the plants that originally emigrated onto the glade. These are the new species or variations that we find in the glades today.



**Mohr's  
Barbara's  
Buttons**

## Kathy Stiles Freeland Bibb County Glades Preserve



### DIRECTIONS

#### From Birmingham:

- Take 1-65 south to the Calera/U.S. Highway 31 exit and travel south about 3 miles into Calera
- In downtown Calera, turn right onto Alabama Highway 25 south towards Centreville
- Travel about 12-13 miles through Montevallo and Wilton
- Turn right (north) onto Bibb County Road 65 and travel about 3 miles
- Cross the Little Cahaba River at Bulldog Bend and continue for about 0.8 miles beyond bridge
- Turn left (south) onto an unnamed dirt road and travel about 0.2 mile to where the road dead-ends at the preserve parking area. Follow the nature trail to the Little Cahaba River.

#### From Montgomery:

- Take 1-65 north to the Calera/University of Montevallo exit
- Turn left to cross over the Interstate and travel west about 1 mile into Calera
- In downtown Calera, turn left onto US Highway 31 and then almost immediately (within 0.1 mile) turn right onto Alabama Highway 25 south towards Centreville
- Follow directions above.



Fringed Bluestar

*The fringed bluestar is found in open glades, while the Alabama phlox may be seen on roadside embankments.*



Alabama Phlox

### Where Are Rare Plants?

Over half of all rare plants in Bibb County are found in the open treeless Ketona glades. Survival on the glades requires plants to adapt to high magnesium levels, a mildly alkaline pH and droughty soils. Many of these specialized glade species are absent from surrounding lands where they must compete with other plants. Within the glades, we find some species that actually thrive in the open sunlit environment. During spring, fringed bluestar can color the glades a soft shade of blue, with summer colors shifting to bright yellow from lobed-leaved brown-eyed Susan, rosinweed, and tickseed. The seasonal change provides a new and different landscape with each visit.

Soil chemistry and underlying geology also influence plant life in the surrounding region. Many of the same plants occurring

on the glades can also be found within surrounding forestlands and along streams. Other rare plants have little relationship to the dolomite glades, but find their own specialized habitats along the region's cliff faces and wetland ravines, or as relict species of a former time when longleaf pine forests dominated the landscape.

The casual visitor need not hike deep into the surrounding countryside to find some of these plants. An afternoon drive along country roads can reward visitors with open meadows of endangered Mohr's Barbara's-buttons bordering the pavement. Occasionally, the rare Alabama phlox is found on roadside embankments. During fall, the endangered candidate, Georgia aster, is found growing along many side roads. Each season brings a new suite of flowering plants to learn and appreciate.

# Eight New Plants

The eight plants new to science are almost exclusively restricted to the Ketona glades. They include Cahaba torch, Ketona tickseed, Cahaba prairie-clover, Cahaba daisy fleabane, Cahaba paintbrush, deceptive marbleseed, sticky rosinweed and Alabama gentian-pinkroot. The Cahaba paintbrush is one of the more beautiful flowers encountered on the glades. While Indian paintbrushes often dominate the western landscape, they are rare in the East. The Cahaba paintbrush is the only yellow paintbrush in the eastern United States and one of the most beautiful plants on the glades.

Another attractive plant is the Alabama gentian pinkroot. This gentian-like flower is only found in a few glades, but grows even on the driest part of these glades. Its attractive pink tubular flower is usually closed, but eventually opens to expose five extending lobes.

Another plant hard to overlook on the glades is the sticky rosinweed. A dense covering of gland-tipped hairs give this rosinweed a distinctive sticky and spongy feel. It is also the only endemic glade plant that is occasionally found outside the glades on surrounding lands. The Cahaba torch is clearly the rarest of the new species and considered abundant on only a single glade. This attractive blazing star is found only in the sunniest center of the glades and may well qualify as one of the rarest plants in the world.



Cahaba torch



Ketona tickseed



Cahaba paintbrush



Deceptive marbleseed



Sticky rosinweed



Cahaba prairie-clover



Alabama gentian-pinkroot



Cahaba daisy fleabane

### For More Information

Bibb County, the Ketona glades and surrounding rural countryside are truly unique botanical areas deserving a personal visit. Each season brings a new and different suite of plants to find and appreciate. For those interested in delving more deeply into this lost world, Cahaba River National Wildlife Refuge and The Nature Conservancy web sites provide places to visit.

- [www.nature.org/wherewework/northamerica/states/alabama/preserves/art902.html](http://www.nature.org/wherewework/northamerica/states/alabama/preserves/art902.html)
- [www.fws.gov/cahabariver](http://www.fws.gov/cahabariver)
- Descriptions and lists of unique and rare plants of the glades are provided on Jim Allison's web site, "A Botanical Lost World."  
— [www.mindspring.com/~jallison/lostworld.htm](http://www.mindspring.com/~jallison/lostworld.htm)
- Information on the annual Cahaba Lily Festival in West Blocton are on the festival's web site. — [www.cahabalily.com/CahabaLilyFestival.htm](http://www.cahabalily.com/CahabaLilyFestival.htm)