

Creek. This area is owned and maintained by the Carbondale Park District. If you intend to cross Little Crab Orchard Creek to access the Woodland Spur Trail, the best place to attempt is at the first footbridge. However, the creek crossing is very steep and should only be attempted when water is low.

11. Fallen trees in forests and streams are tremendous sources of energy for these ecosystems. Dead trees provide food and nutrients for fungi, worms, and insects. These wood consumers are important sources of food for other animals in the forest. In streams, wood provides structure for some organisms to inhabit and a resource for others to consume. In fact, woody debris and leaves that it traps can house most of the aquatic diversity in sandy and silt bottom streams.

12. Little Crab Orchard Creek eventually meets the Big Muddy River and drains into the Mississippi River. The creek here has been cutting into the sides of the bank because it has been channelized downstream to reduce flooding. One concern about bank cutting is the increased sediment carried by the stream. Excess sediment reduces in-stream habitat quality and water quality.

13. Trees are important sources of energy in ecosystems. Plants take carbon dioxide out of the air and turn it into their tissue. Thus, protecting mature forests and reforesting disturbed areas can help offset increasing concentrations of carbon dioxide in our atmosphere from the combustion of fossil fuels.

14. Spicebush is a common shrub in this forest. In the spring, it contains many small yellow flowers at the base of each leaf. Spicebush shrubs are a sign that Spicebush swallowtail butterflies will be here in the summer. Spicebush swallowtails are mostly black with iridescent blue and white markings. Other common butterflies here include tiger swallowtails (black and yellow striped), zebra swallowtails (black and white striped), red admirals (black

with red and white markings), buckeyes (brown with two eyespots on the hind wings), and commas (orange and dark brown coloration).

15. Forest communities are often a good indication of water availability in an area. There is a distinct stand of a flood tolerant tree species here, river birch. The river birch community surrounds an old oxbow of Little Crab Orchard Creek.

16. The area across the creek is recovering from pasture use. Although many trees will re-establish naturally, desirable species, such as oaks, are often planted to hasten the recovery process. Each time you visit this trail, the recovering forest will probably look a little bit different as species sort out over time. This will be an exciting area to watch develop for decades to come.

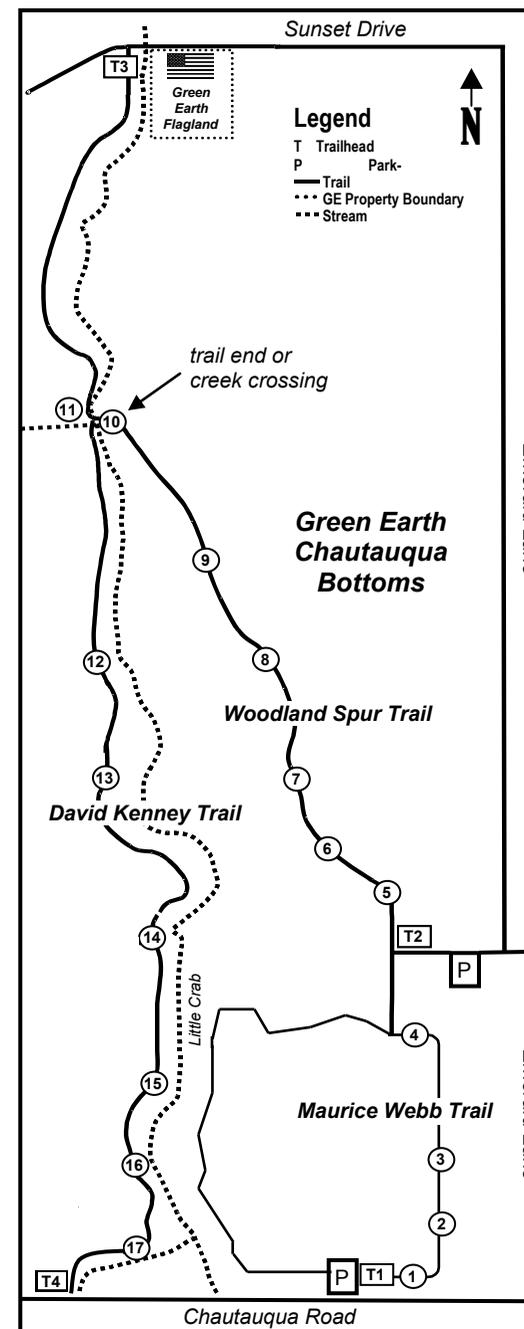
17. Exotic species are abundant here; particularly the thorny vine called multiflora rose. Exotic species are native to somewhere else and become a serious problem when they out-compete native species for resources. When exotic plants become dominant, many other species may be affected such as insects that feed on or pollinate native plants, and birds that rely on those insects for food or the native plants for cover. Exotic species tend to thrive in disturbed areas or areas that contain a large amount of "edge" habitat, such as small nature preserves in a predominantly urban setting.

**Trailhead 4 (T4): Chautauqua Bottoms, Chautauqua Road, west entrance**

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director@greenearthinc.org

or  
Green Earth, Inc.  
PO Box 441, Carbondale, IL 62903



# Chautauqua Bottoms Trail Guide



**Green Earth, Inc.**  
*Preserving Natural Areas For  
Future Generations.*

## Welcome to Green Earth's Chautauqua Bottoms Complex!

This trail connects two natural areas preserved by Green Earth, Inc. This guide identifies points of interest between Chautauqua Bottoms and Green Earth Flagland (see map). This interpretive guide begins at Trailhead 1 (T1), located at the east entrance to Green Earth Wetlands on Chautauqua St. You can enter the Complex from three other trailheads: the west terminus of Freeman St. (T2), west of the bridge over Little Crab Orchard Ck. on Sunset Dr. (T3), or the west entrance to Chautauqua Bottoms on Chautauqua Rd (T4). The numbers in this guide correspond numbered wooden markers along the trail. Before using this guide, locate where you entered the trail (T1-T4) on the map. Refer to the map frequently during your walk, for there are several forks along the trail.

We hope you enjoy your walk through these natural areas. Please feel free to keep this guide or to return it to any one of the trail guide boxes located at the trailheads.

### Trailhead 1 (T1): Green Earth Chautauqua Bottoms, Chautauqua Road - east entrance

1. Wetlands come in a variety of forms, all influenced by continuous or seasonal flooding. Chautauqua Bottoms is part of the alluvial floodplain of Little Crab Orchard Creek. Historically, this area was bottomland hardwood forest. In 1991, Green Earth acquired approximately 10 acres of this floodplain that was previously used as a horse pasture. The area was planted to native prairie grasses and wildflowers. Today, the prairie grasses hide, but do not eliminate, the continuous control of this wetland by water. Trees have been allowed to grow around the periphery of the prairie to form a more natural transition community to the hardwood bottomland.

2. The prairie established here contains warm-season grasses big bluestem, Indiangrass and

switchgrass. Twenty-two additional species of legumes and composites were planted. The prairie grasses are particularly beautiful in late summer, when their flowering stalks tower up to six feet tall and their stems contain red to purple hues. It is difficult to maintain diversity in restored prairie without periodic fires or grazing. Trees are frequent invaders here because the soil and moisture conditions are conducive to the native lowland woodland species. Additionally, exotic species, such as multiflora rose and autumn olive, form dense stands in this wetland. The prairie community is maintained by a combination of mowing, burnings, and removing exotic species.

3. From the ground it's difficult to distinguish distinct zones of vegetation in this area, but only slight changes in elevation can cause large differences in plant communities.. The higher ground is covered by the prairie grasses, whereas the lower-lying ground is dominated by rushes, sedges, and dense stands of a native yellow-flowering plant called "beggar-ticks" that produces many dry seeds, some of which may follow you home on your clothing. Look out across the landscape and notice the patches of colors and patterns created by the vegetation.

4. Wetlands are not always wet, but here lies a small depression that holds enough water to support the characteristic sounds and sights of a wetland. Frogs will breed in these ephemeral pools, as will a variety of aquatic insects, including dragonflies. Wetlands also filter nutrients and sediment from runoff, acting as a natural water purification system. Because of the numerous services and values of wetlands, conservation and restoration of these ecosystems are a high priority nationwide and throughout the world. Did you know that one third of endangered species use wetlands to some extent?

*Here the prairie community gives way to the forest. Refer to the map to decide which trail you want to follow.*

### Trailhead 2 (T2): Green Earth Chautauqua Bottoms, Freeman Street

5. This kiosk displays a poster of common woodland wildflowers in Illinois. Bottomland forests in southern Illinois can harbor a diverse array of wildflowers. Most of the species here bloom in spring. Common wildflowers on this trail include bluebells, May apple, trillium, dog-toothed violet, Dutchman's breeches, Jacob's ladder, and common phlox

6. The trees here are fairly uniform and the grassy understory is not representative of floodplain forest in southern Illinois. The forest and understory structure is different here because the topsoil was removed at one time to elevate the land for residences on Emerald Lane.

7. On the east side of the trail here you may be able to see inundated areas, especially during wet periods. These wetlands are a haven for wildlife. A large herd of deer resides in this forest and can be seen most of the year. Wood ducks nest in standing dead trees in the spring. Another common resident you may hear is the Pileated woodpecker, the largest woodpecker in North America. They call with a loud, high pitched repeated note.

8. This area is a fairly mature floodplain forest with three distinct vertical layers of vegetation. The overstory, or highest species in the canopy, contains several types of oaks, hickories, sycamore, elms, and hackberry. The midstory layer consists of much shorter trees and is dominated by paw-paw in this forest. The understory contains mostly herbaceous plants. The woodland wildflowers are understory species, as are stinging nettle and poison ivy.

9. Trees are often easiest to identify when their leaves are present. Some trees are also easy to identify from their bark, seeds, or fruit (nuts). For example, sycamore trees have smooth, pale bark that tends to peel off. Shagbark hickories have very rough and shaggy bark. Acorns on the ground are signs of oaks. Round, golf-ball sized fruit are from sycamore trees.

The acorns and nuts produced by oaks and hickories are important sources of food for wildlife. The mass production of fruits and nuts is called "masting" and may be a strategy to ensure that some seeds will be left to regenerate the forest even after many are removed for food.

10. Little Crab Orchard Creek has been modified directly and indirectly by humans. Downstream, the creek has been channelized to reduce flooding. This causes the water to drain faster and cut into the sides of the banks. The creek also probably receives more runoff than it used to because part of the watershed has been cleared of forest and replaced with streets and residences. These in-stream and landscape disturbances make it very difficult to restore floodplain forests.

*The David Kenney Trail is located on the other side of Little Crab Orchard Creek. Use extreme caution if deciding to cross, and only if the creek is at low flow.*

### Green Earth Flagland

This residential green space was donated to Green Earth by the late Harris Malan. In the center of this property is a patch of native prairie grasses and wildflowers. Southern Illinois once contained pockets of tallgrass prairie. Most prairies here, and in the Midwest as a whole, have been converted to cropland because the soils were easy to till and rich in nutrients for plant growth. Native prairies were quite diverse and produced an array of color across the landscape. This restored prairie patch also displays a colorful combination of wildflowers. This prairie is mowed once a year to remove the plant litter. This prairie patch is not watered or fertilized, demonstrating a low maintenance alternative to traditional landscaping that you could try in your own yard.

### Trailhead 3 (T3): Chautauqua Bottoms, Sunset Drive

The first part of this trail travels through the riparian forest along Little Crab Orchard