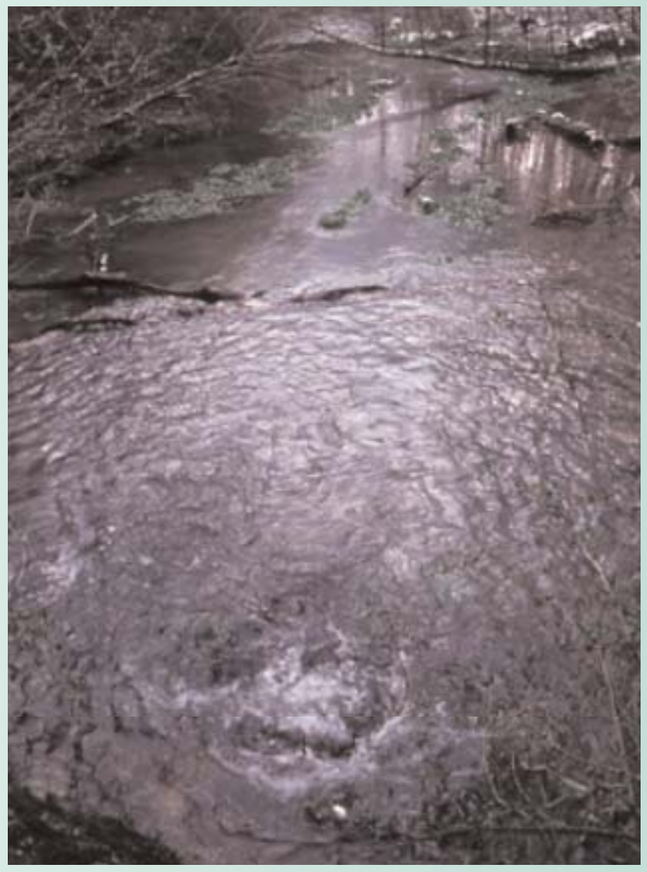
The Boils
Introduction

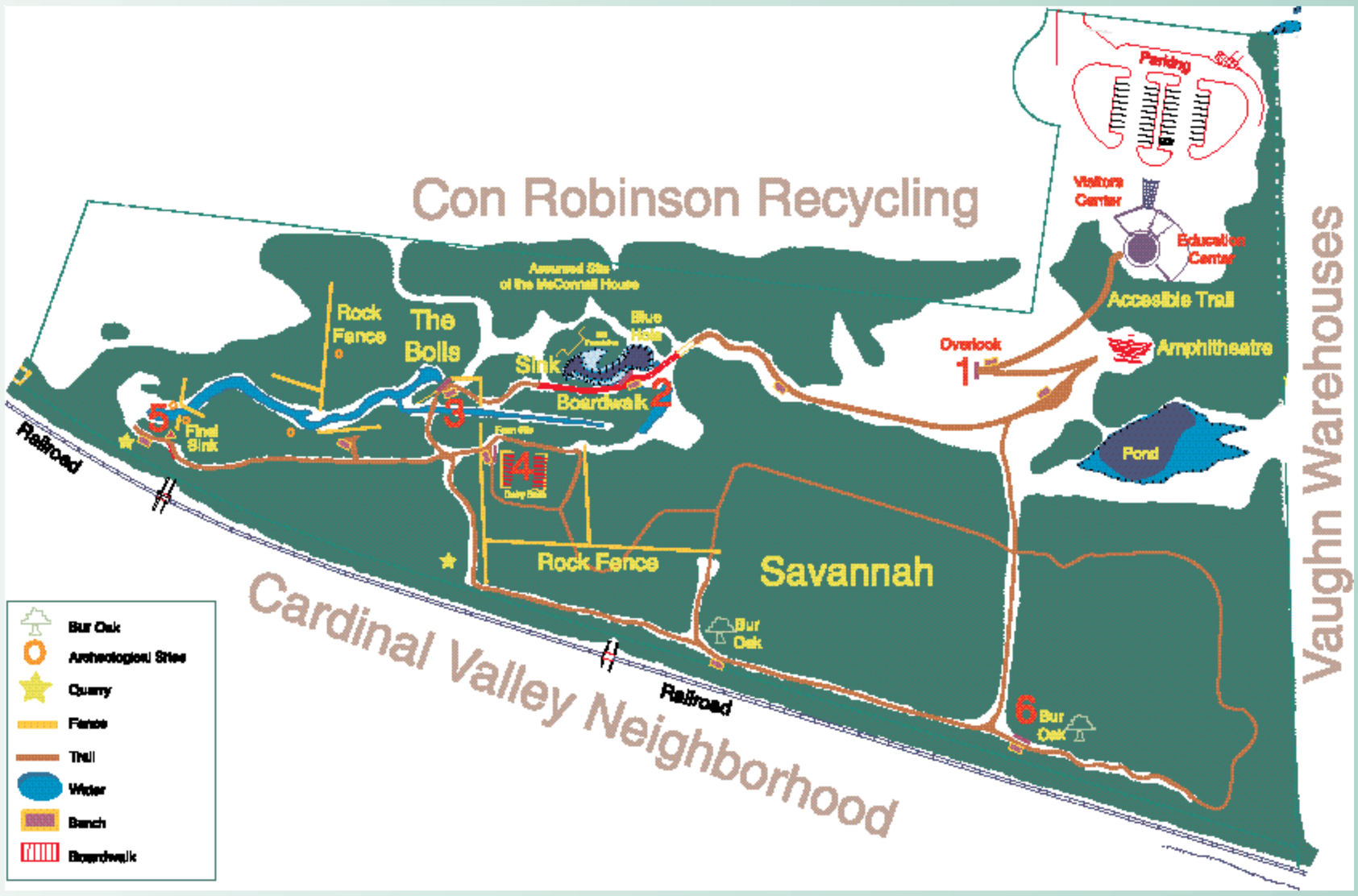
This second spring of the McConnell Springs system is called the Boils because of the action of the water emerging from the underground conduit. During heavy rains, a column of water rises from this spring to a height of up to 24 inches.

This spring and the preceding Blue Hole are both considered "artesian" springs. Artesian means a well or spring which forces water to the surface of the ground because of pressures below the surface. These two springs have taken very different forms as described in the previous notebook.

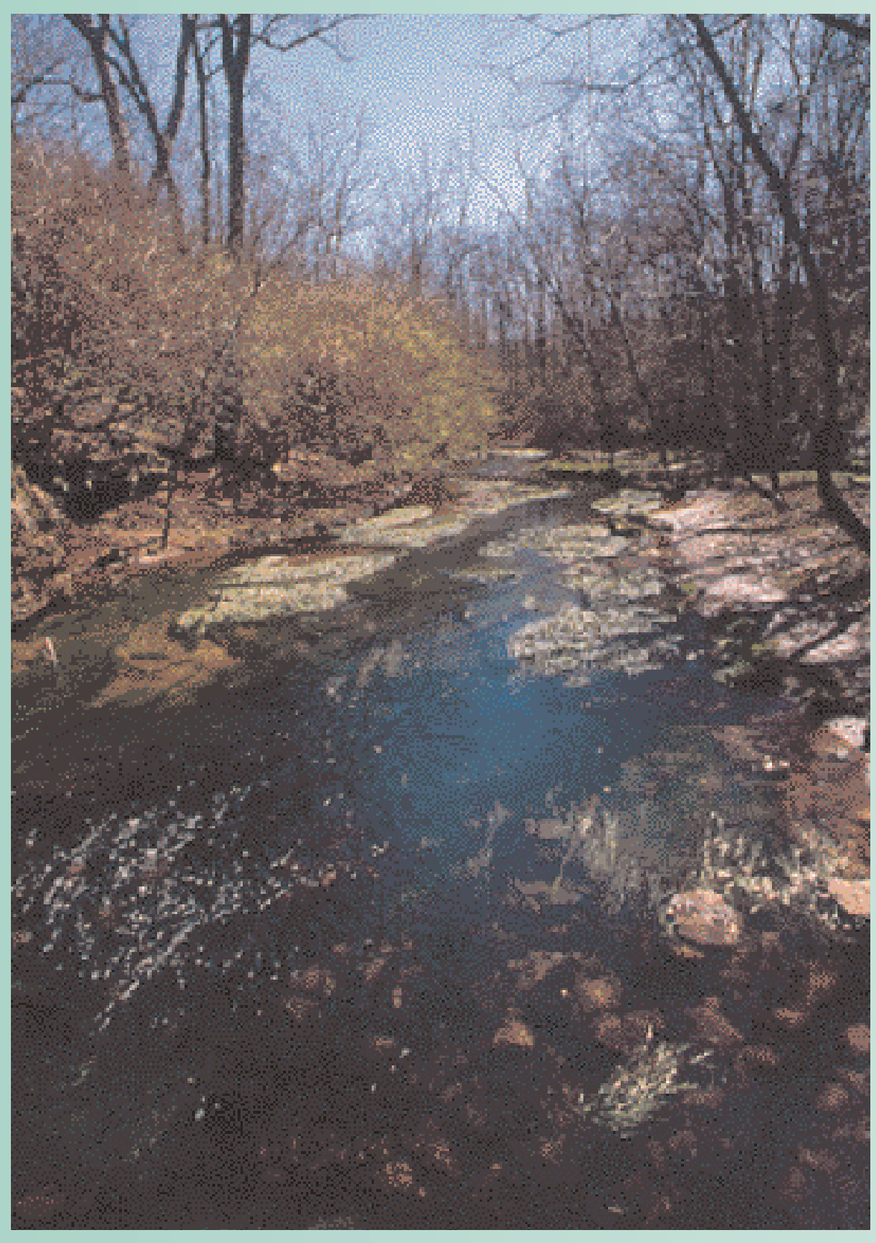


This area also features the remnants of rock fences which occur throughout the Springs. Contrary to popular belief, these fences were not constructed by slaves. They were constructed by itinerant Irish and Scottish emigrant masons beginning in the early 1800's. Workshops have been conducted here at McConnell Springs to teach local masons the almost forgotten techniques of constructing these fences. The Dry Stone Masonry Conservancy sponsored these workshops under the direction of Richard Tufnell, dry stone consultant.

At the turn of this century, rock fences lined nearly every road in Fayette County. As these roads were paved, the rock fences were demolished and used to prepare a solid base for the asphalt wearing surfaces of the modern roadways. It is estimated that less than 5% of the original rock fences remain in Fayette County. The efforts here at McConnell Springs to restore the rock fences have reaped rewards for all of Central Kentucky as trained masons undertake rock fence restoration projects throughout the Bluegrass area.



The Boils
Physical Characteristics



Underwater plants show clearly through the bubbling waters at the Boils.

The Boils stir through the surface of a pool turned brown by winter thaw as snow covers the land surrounding it.

A heavy rain spreads the pool at the boils and brings the water bubbling up higher than twenty-four inches.

The artesian spring at the Blue Hole flows strong and steady through the earth, forming a deep pool with a sharply sloped, funnel-like bottom. It flows along a stream bed for several dozen yards, then submerges to reappear here at the Boils. When heavy rainfall has increased the flow not just from the Blue Hole, but also from water which has sunk into the ground and thus into the channels that feed the Boils, the force of this spring increases dramatically. It pushes its way through the debris, the surface bubbling in the way that gave rise to its historic name – The Boils. At times the water fountains upward as much as two feet, creating a lovely sight available to all who are willing to venture into McConnell Springs during the soggy times that produce it.

Physical Characteristics

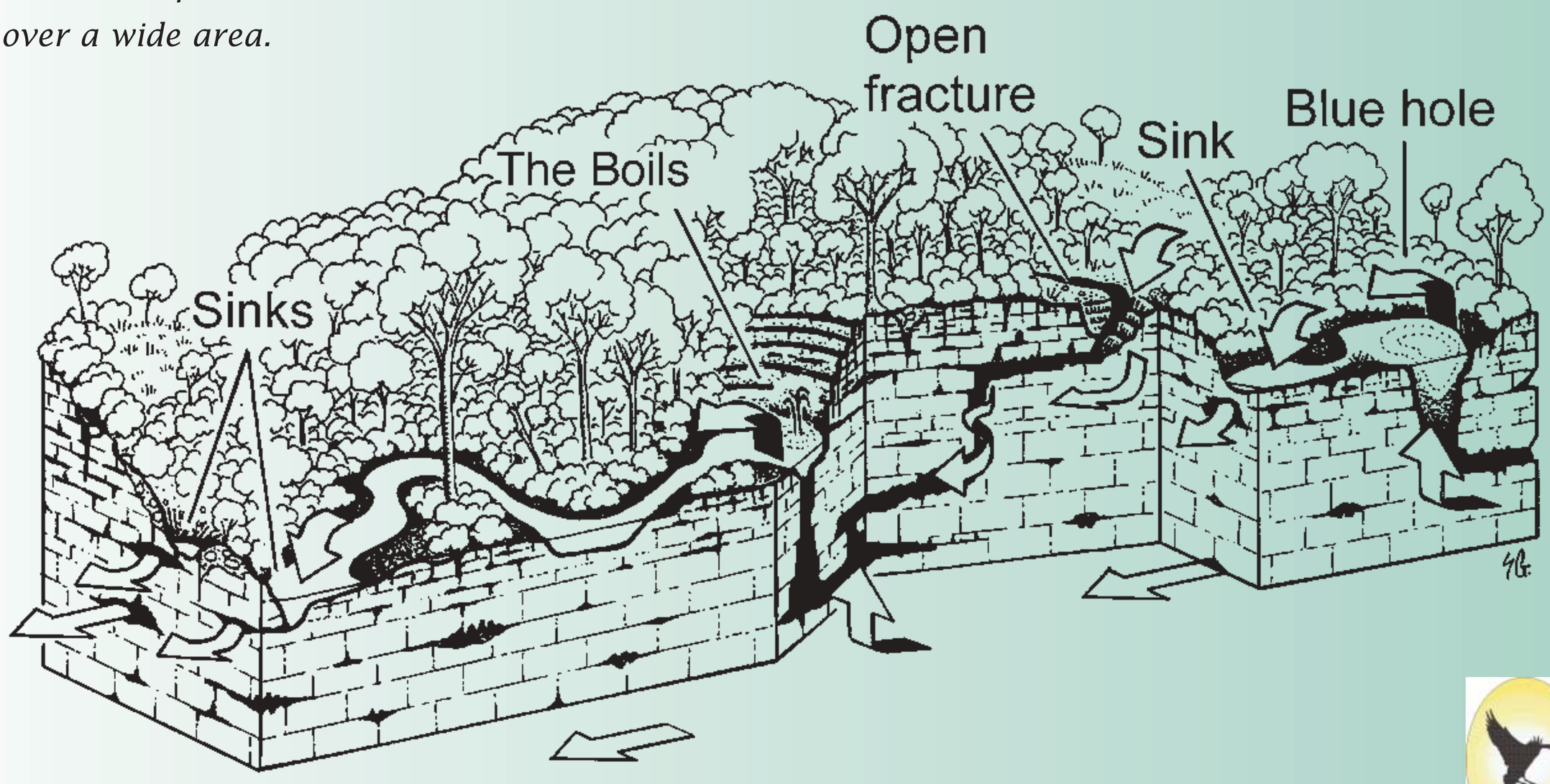
Limestone Structure

From the rock fences that surround its fertile horse farms, to the caves and conduits for ground water beneath its soil, to the mines hundreds of feet beneath its surface, the spirit and continued vitality of the Inner Blue Grass Region depends on the carbonate rocks of the Lexington Limestone Group and the High Bridge Group, consisting of the Tyrone, Oregon, and Camp Nelson Formations.

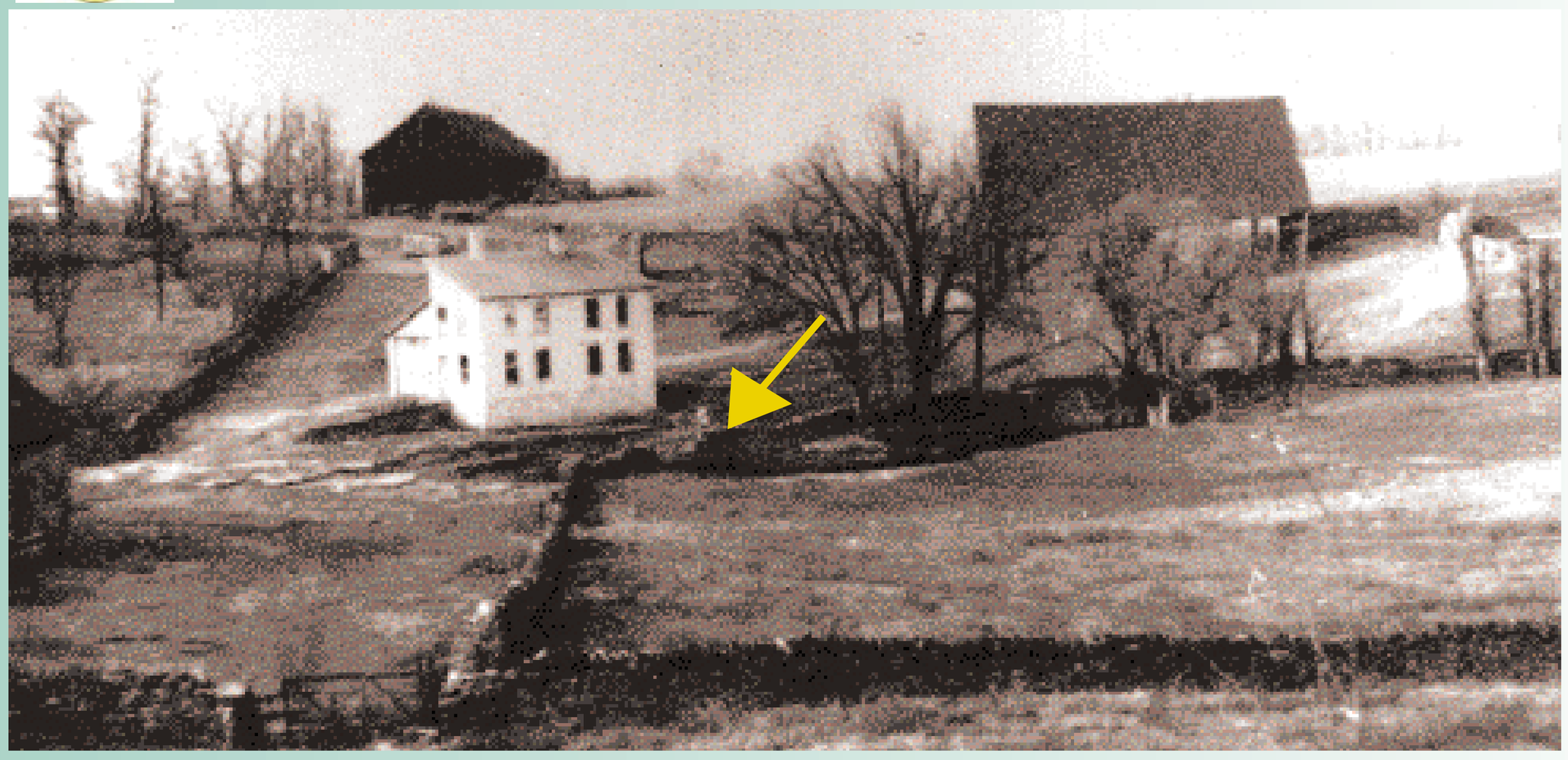
The geologic history of McConnell Springs began more than 450 million years ago during the Ordovician Period with limy calcium rich muds being deposited on the bottom of the warm shallow seas that spread over this area. Marine life was abundant, as can be seen by the numerous fossil fragments in the limestone formations. To a geologist, a formation or member is the name of a rock that can be traced over a wide area.

The names of the various rock layers usually indicate a place where these rocks are best exposed. The layers of rock exposed at the surface at McConnell Springs are, from bottom to top, the Grier, Brannon, and Tanglewood members of the Lexington Limestone Group. These can be seen on the geologic map of the area. Deep beneath the site lie Camp Nelson, Oregon, and Tyrone Formations, which are mined for limestone products.

Forming a backdrop to the Boils is an exposed limestone shelf, showing the layers of rock that allow formation of the conduits necessary to produce springs.



The Boils
Culture History



A photograph of the Springs in the 1950s shows various buildings on the Cahill farm, with the Blue Hole in front of the large white building. The layout of rock fences show how early farmers used them for defining fields and grazing systems.

Old photographs of the land around McConnell Springs when it was a stock farm show rock fences bordering the pastures, fields and barnyard. We cannot find records telling exactly when these fences were built, but most rock fences that surround pastures and farm yards in Kentucky were built in the early 1800s. Their construction matches stone walls in the British Isles, from whence most of the ancestors of Kentucky settlers came.

Rock fences have no mortar. Gravity and frictonal resistance hold them together. The sides slope inward from the bottom up, so that as the ground freezes and thaws, and the fence sides settle, gravity pulls them toward the fence center.

Tie-rocks extending all the way through the fence from one side to the other help lock the two sides together. The weight of the coping (the fence top) also helps hold the courses below in place. Although each fence yard weighs approximately one ton, a thick, wide foundation course prevents undue settlement. Dry-stone fences are somewhat flexible and last much longer than those built with mortar because freezing water and ground movement do not push the rocks out of place.

Changes in land use surrounding McConnell Springs account for demolition of many of the rock fences that once were here. Uncontrolled shrub and tree growth has destroyed others. In the past few years, friends and volunteers have conducted several workshops to restore some of the original fences, and have added mortar to the copings and wallheads to deter vandalism.

Culture History

How to Build a Rock Fence

figure 1

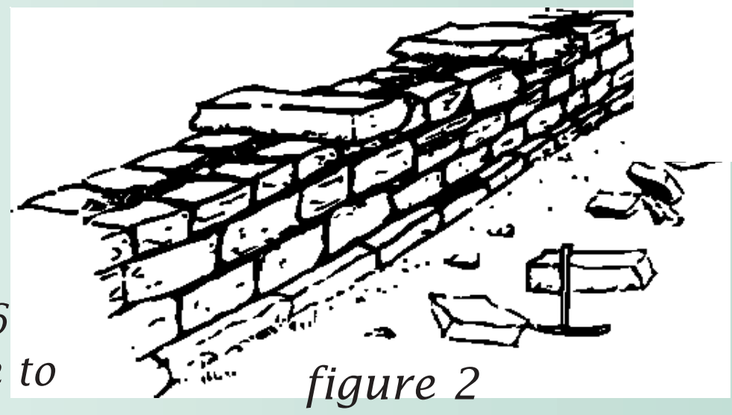
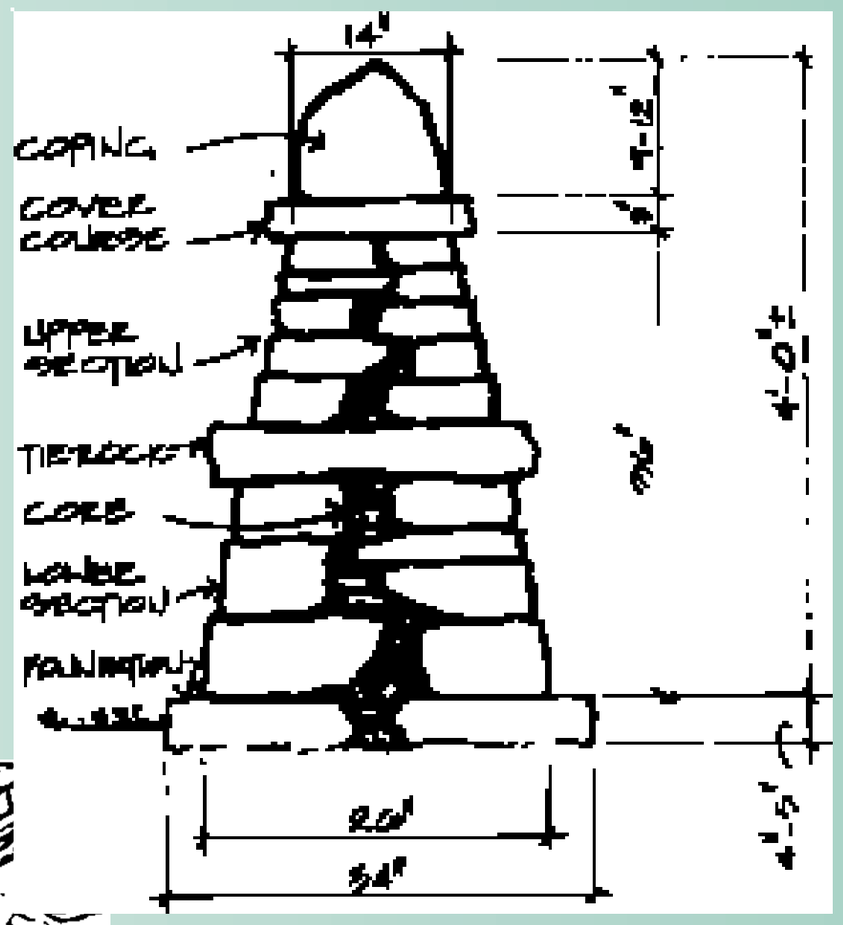


figure 2



* Info from the Dry Stone Masonry Conservancy.

figure 3

1. Prepare the ground to receive the fence foundation by removing sod and topsoil to a depth of 4 to 6 inches. Create a hard level surface to receive the foundation stones.

2. Stretch two strings to mark the outsides of the foundation (usually 8 inches wider than the base of the fence) and begin laying stones with their long dimensions into the fence rather than along the fence's length. Lay one side of the foundation first, then lay the other side. Complete the foundation by carefully packing the center with waste stone pieces.

3. Construct two "A" frames of wood to guide the placement of the fence's faces with the proper batter or taper as the fence ascends. Set these "A" frames 5 to 10 yards apart and draw strings taut between them. Lay the base course or layer of one side of the fence first, running long stones into the fence. Lay the other side of the fence and pack the core between the two face courses carefully with waste rock. Continue laying alternate faces in this manner until the fence is halfway up to its final height. (See Fig. 1)

This section of rock fence stands beside the Boils

4. When the fence is built to half its finished height (not counting the coping) lay tie rocks across the fence at 36-inch intervals. Tie rocks are large stones which extend completely through the fence at mid height and tie the two faces of the fence together. (See Fig. 2 and 3)

5. Above the tie rock course, raise the guide strings and continue placing the face stones and filling the core until the fence reaches its finished height. A person should be able to walk along the top of the fence without dislodging any stones. A cover course is then laid to tie together the face courses at the top of the fence. The cover course strengthens the fence and provides a good base for the coping stones.

6. The coping course finishes the fence. There are two common styles of coping courses on Kentucky rock fences: single coping and double coping. Both types feature stones laid vertically with their tops leaning downhill. The single coping style features stones which span the width of the fence. The double coping style features smaller coping stones laid flush with the outside faces of the fence in an alternating pattern. Single coping stones are used every six feet to tie the double coping faces together. Finally, in both styles, the coping is locked by driving stone wedges at regular intervals between the coping stones.

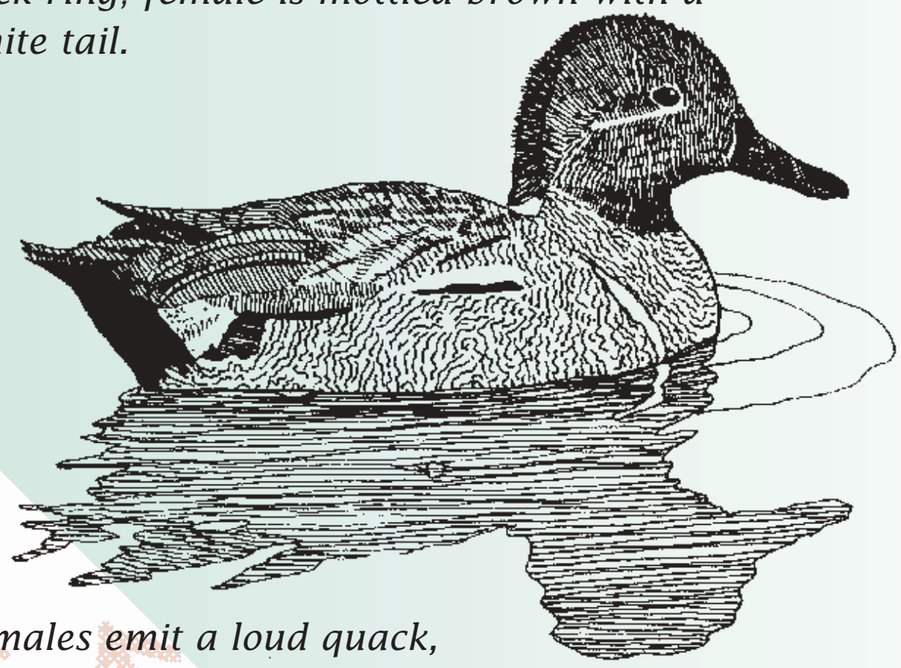
The Boils Fieldguide

Eastern gray squirrel
(Sciurus carolinensis)

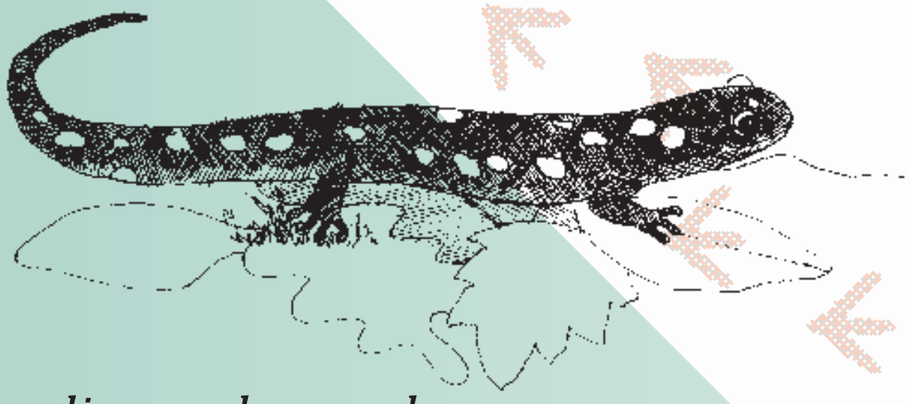
- Common in back-yards, parks and wooded urban areas.
- Approximately 8-10 inches in length with bushy tail adding other 7-10 .
- Rarely found far from trees; is primarily arboreal.
- Nests in holes in trees or builds nests from leaves in branches.
- Feeds on a variety of seeds, fruit, fungi and nuts which it collects.

Mallard
(Anas platyhynchos)

- Most abundant duck in the world; can be either migratory or year-round resident.
- Male has an iridescent green head and white neck ring; female is mottled brown with a white tail.



- Females emit a loud quack, while the male's call is more of a muttering.
- Mallard is ancestor of the domestic duck. It interbreeds with both domestic and wild ducks for an assortment of varieties.



Northern slimy salamander
(Plethodon glutinosus)

- Fairly common in wooded ravines and hillsides.
- Large for a salamander, it is 4-7 with numerous white spots or brassy flecks; undersides usually pale gray.
- Skin secretions very sticky, glue-like, and have to wear off.
- Are amphibians, which means that at least some part of their lives must be spent in the water

Bellwort
(Uvularlia perfoliata)

- Frequently found in both dry and moist woods
- Identified by its drooping yellow flowers in late April to early May
- Leaves completely sheath the stem, making it seem to pierce each leaf
- Member of the Lily family

Fence lizard
(Sceloporous undulatus)

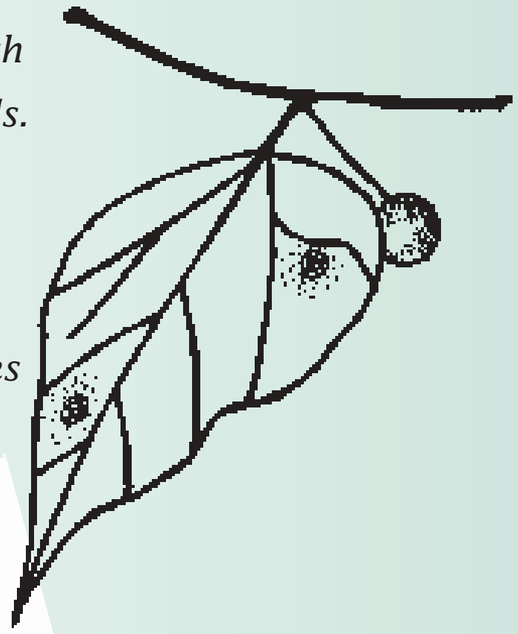
- Most common in Kentucky, often seen darting along porches or woodpiles.
- Small (4-7), gray or brown and spiny.
- Primarily insectivorous; also eats spiders, other arthropods and on occasion other lizards and baby mice.
- Only spiny lizard occurring north of Florida or east of Texas.

Black cherry
(Prunus serotina)

- *Common fence-row tree of the bluegrass*
- *Simple, alternate leaves with serrate margin*
- *Fruit is a drupe that is greenish, reddish, and eventually turns black. It is a preferred wildlife food.*
- *Drupes are different from berries. They have a stone encasing the seed, while berries have a fleshy covering.*
- *This tree yields valuable furniture timber*

Hackberry
(Celtis occidentalist)

- *Common bluegrass tree which grows on moist sites and soils.*
- *Very easily identified by its unusual warty bark.*
- *Member of the elm family, with characteristic elm leaves which are simple, alternate, serrate and asymmetrical at the leaf base.*
- *Produces a dark orange-red drupe fruit, good for wildlife.*

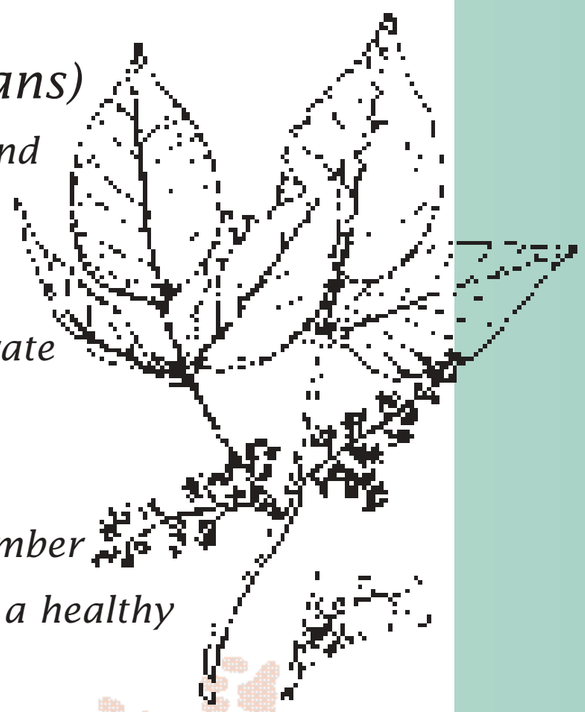


Appendages waterleaf
(Hydrophyllum appendiculatum)

- *Frequent wildflower of moist woods and thickets in the bluegrass.*
- *Small lavender flowers, arranged in a cluster, appear in May, with small alternating appendages between sepals.*
- *Broad maple-shaped leaf with pale mottling.*

Poison-ivy
(Toxicodendron radicans)

- *Common ivy-like plant found in all parts of Kentucky.*
- *Infamous for its poisonous resin, which causes moderate to severe irritation to skin.*
- *Identified by alternately arranged 3-leaflets. Remember leaflets 3, leave me be for a healthy woodland experience.*
- *Fruit is a cluster of pale white berries.*
- *Member of the family Anacardiaceae which includes poison-oak, poison-sumac, sumac trees and cashews; many members of this family have chemical defenses.*



Bush honeysuckle
(Lonicera maniculata)

- *Exotic species problematic to many parks and backyards.*
- *Quick growing bushy tree.*
- *Leaves oppositely arranged, simple, with lightly serrated margin.*
- *Produces flowers with deep corolla tube and exerted stamens.*
- *Leaves stay on branches for most of the year (February-November).*
- *Creates difficulties for native plant communities because it can often out compete native species for resources, and often lacks the population controlling mechanisms of its home community.*

The Boils

Community Support

From the beginning, The Friends of McConnell Springs has been about community. The site is where our community first became identified with Lexington, and where the progress of its development can be marked in the soils, the environment and the evidence our ancestors left behind. When The Friends organized in the fall of 1993, chair Isabel Yates knew that only through the dedication of the community would the vision of preserving McConnell Springs be realized. The evidence of that dedication is all around you.

The Friends had a year to raise $130,000 to purchase the park; donations from one dollar to $10,000 brought us to that goal well before our deadline. During the year hundreds of volunteers donned gloves and boots to help clear the land of years of abuse. Garbage was bagged, concrete block removed, and appliances were even drawn from the unseen depths of the crystalline Blue Hole. In July 1994, when a design charette was held to plan the future of McConnell Springs, 150 people from all walks of life came together for an intense weekend of drawing, brainstorming and discussion. The volunteers included professionals who donated their skill and time to help make the dream come true.

Since that time, the community support for McConnell Springs has never wavered. Boy Scouts, Girl Scouts, 4-H groups, fraternities, sororities and service organizations have logged thousands of hours at the Springs cleaning, digging out unwanted plants, laying trails and building bridges. Some have become partners with The Friends in this endeavor; the Junior League was the moving force behind our amphitheater, and Kentucky-American Water Company led the way with donations toward our Education Center. Procter & Gamble came through for our educational programs, joining us through their five-year funding commitment.

Landscape architects, archaeologists, naturalists and builders, among others, have done their part in making the past accessible while preserving it. A world-renowned drystone consultant came from Great Britain to rebuild our rock fences first constructed in the early 1800s by Celtic stonemasons; his services again came courtesy of community support. During all the work, donations continued to bring us steadily closer to our goal of finishing the Visitor's and Educational Resource Center before the year 2000.

We salute our community, and ask you to think of the thousands of people who made this possible as you wander through the rich history of yesterday merging with the lush greenery of today at McConnell Springs.