



SCAN *South Carolina Association of Naturalists*

Post Office Box 5651, Columbia, South Carolina 29250-5651

April 2014

Happy Spring Everyone!

We enjoyed wonderful weather conditions and had a great turnout for our trip to Forty-Acre Rock last month. Twenty-nine folks showed up: Jimmy Boylston, Caroline Eastman, Red Smith, Tom Jones, Mary Douglass, Marty and Dave Kastner, Alice and Charlie Brice, Kay and John Hollis, Kim McManus, Paul Kalbach, Jules Fraytet, Ben Gregory, Wayne Grooms, Kathy Boyle, Jen Fill, Phil Harpootlian, Jan Ciegler, Marsha and Bob Hamlin, Sudie and Garrett Daves, Pam and Chris Stuyck, Eva and Sam Pratt, and Gordon Murphy.



Our day started in the parking lot where hosts Kathy Boyle and Wayne Grooms shared interesting information about the geology and flora of the area. They explained how Forty-Acre Rock is a pluton, which is igneous rock formation formed by the cooling of magma beneath the Earth's surface, and how historically the area was covered by a layer of soil several miles thick. Over time the soil eroded away leaving the exposed granite outcrop. Fortunately Forty-Acre Rock was never quarried, and we can now enjoy the impressive feature and the unique plant species that have adapted to life in the vernal pools and thin layers of soil on the rock surface.

We started our adventure exploring the enormous boulders located on the recently acquired Baxley Tract. This is an absolutely awesome addition to the Heritage Preserve system. These boulders are truly awe-inspiring. Words cannot describe the feeling of standing next to one of these huge boulders that are jumbled on the north-facing slope. I would have expected to look upslope and see an exposed rock surface from which the boulders originated, but this was not the case. When you look up the hill, all you see is forest. The jumble of boulders form many protected nooks and crannies that had folks poking around looking for herptiles. One treasure that was found in a crack of a boulder was a timber rattlesnake.



After clambering around the boulders on the Baxley Tract, we headed over to Forty-Acre Rock, which Wayne explained is not truly forty acres in size, but actually fourteen acres of exposed rock. Granite outcrops like Forty-Acre Rock are found through in the southeast from Virginia to Alabama, and as previously mentioned, they harbor plant species that do not occur in any other habitats. Two very special species that occur only in vernal pools on these outcrops are pool sprite (*Amphianthus pusillus*), a federally listed



Pool Sprite

Threatened species, and black-spored quillwort (*Isoetes melanospora*), a federally listed Endangered species. We were fortunate to see both of these species as well as other species adapted for life in the vernal pools. Because water is present in the vernal pools for short periods during the year, plants that occur here typically bloom early in the year before the pools dry up during the hot summer months.

I am always amazed to see the variety adapted to life in thin layers of soil and bare rock, such as pine and cedar trees, herbaceous species. As many times as I Rock in my lifetime, this was the first lilies up on the rock. I typically think floodplain species. Several of us were and the question of how they got their I checked a couple of resources when I explanations. One reference explained



Bloodroot

during another



Trout Lily

Regardless of the origin of the common name, it is a beautiful plant.

of plants that have organic materials on the and a variety of have visited Forty-Acre time I have seen trout of them as a more of a discussing the trout lilies common name came up. got home and found two that the plant blooms trout fishing season and attributed the name to the

Before heading to Gus' House of Pizza in Kershaw, we walked along Old Highway 601 in the southern portion of the preserve. A diabase dike is located in this area which provides a soil type that harbors plant species different from those in other parts of the Preserve. Jerry did a little on-line research about Forty-Acre Rock following our visit and found some interesting information about



Forty-Acre Rock. Rather than summarizing the information, I decided to include the information to the newsletter as an attachment.

Again, we enjoyed a great trip, had wonderful weather conditions, and I would like to thank Wayne and Kathy for coming up with a great alternative trip location and for the great information they shared with the group.

However, as happens occasionally on our adventures, one of our members had a miss-hap. Marty Kastner took a tumble that left her with a broken arm. Keep Marty in your thoughts as she goes through her recovery period and we hope to see her back in the field soon.

Please note that our trip schedule has yet another last minute change of venue. We were planning on incorporating this month's trip with the Birding Festival at Santee. However, Caroline found out that a youth turkey hunt will prevent us from entering the area we originally planned for; therefore, we will instead explore Wannamaker Preserve.

I hope to see you all there!

Gordon

Wannamaker Nature Preserve
Calhoun County
Latitude: 33.636522 Longitude: -80.70596
April 26, 2014

We will revisit Wannamaker Nature Preserve in near St. Matthews in Calhoun County this month. Our previous visits were in February 2006 and March 2001. Do you notice a pattern? Obviously the next visit needs to be in May! The nature preserve is owned and managed by Columbia Audubon Society. Dan Tufford, Research Associate Professor in the Department of Biological Sciences at the University of South Carolina, is the refuge coordinator for Columbia Audubon. Dan has been conducting research on the seeps found in the preserve.

Not normally open to the public, the Wannamaker Nature Preserve is over 400 acres. Formerly owned by Jack Wannamaker, who used much of it for livestock and row crop agriculture, it is now used for natural history education and scientific research. Containing a diverse habitat of creeks, bottomland swamp, and forest ranging from young to mature pine/hardwood, this relatively small tract is unique and especially useful for education and research

The preserve protects north-facing bluffs along the floodplain of Lyons Creek, as well as harboring bottomland hardwoods, pine woods, and regenerating forests. The bluff has numerous spring wildflowers and plentiful mountain-laurel. Large trees abound. Observations on previous SCAN trips include Southern Wood-fern, Shagbark Hickory, Umbrella Tree, Yellow Corydalis, Trifoliate Orange, Bluets, Butterweed, five species of woodpeckers, both kinglets, Black-and-White Warbler, and Wood Duck. Observations on recent scouting trips include vocalizing Bobwhites and Barred Owls as well as a possible champion tree.

Unfortunately the invasive alien *Elaeagnus pungens* has spread widely on the slopes and elsewhere. Columbia Audubon has removed much of this plant along the trails, but it remains a continuing problem. Beavers are also dramatically changing the landscape through their activities; the flooded areas are more extensive than during our previous trips.

On April 7, 2012, the Midlands Chapter of the Carolina Butterfly Society visited the preserve and found 89 butterflies representing 18 species: Eastern Tiger Swallowtail 5, Palamedes Swallowtail 4, Spicebush Swallowtail 9, Pipevine Swallowtail 1, Pearl Crescent 1, Red Admiral 1, American Lady 6, Red-spotted Purple 1, Mourning Cloak 1, Carolina Satyr 8, Gemmed Satyr 8, Appalachian Brown 1, Eastern Tailed-blue 4, Red-banded Hairstreak 3, Hackberry Emperor 1, American Snout 4, Question Mark 1 (fresh), Zabulon Skipper 22 (all males), Satyr species 7, and Swallowtail species 1. The carnivorous Harvester butterfly has been seen several times at the preserve but was not seen on this trip.

If you are approaching on Interstate 26 from the north, take exit 136 to get on SC 6. Take SC 6 east to St. Matthews.

If you are approaching on Interstate 26 from the south, take exit 145 to get on US 601. Take US 601 east to St. Matthews.

If you are approaching on Interstate 95 from the north or are staying in the Santee area for the Santee Birding and Nature Festival, take exit 98 to get on SC 6. Take SC 6 north towards St. Matthews. The preserve should be approximately five miles north of SC 33. If you get to St. Matthews, you have gone too far.

You can get to St. Matthews. You have maps. You have GPS. You have the above directions. If you want to buy coffee or snacks or use a flush toilet, this is your chance. From St. Matthews take SC 6 southeast for approximately four miles. The preserve is past Beacon Light Road on the left side. There will be signs by the entrance gate. We will meet at the picnic shelter at 10:30. There is also a pit toilet style restroom.

We will have dinner at the Calhoun House of Pizza on US 601 in St. Matthews. From the preserve, drive to St. Matthews on SC 6 and turn left at 601. [The Hardee's is at this intersection.] The House of Pizza will be on the left. The address is 721 Harry C Raysor Drive, St. Matthews, SC [aka US 601]. Phone is (803) 655-7827. Menu is quite good, lacking only in BBQ. As you drive through the center of St. Matthews, enjoy the Purple Martins nesting the railroad tracks. Website: <http://www.calhounhouseofpizza.com/index.html>

Lancaster News

October 10, 1993

Rare plants find home on Forty Acre Rock

by Barbara Howell

Although called Forty Acre Rock, the name of this feature is misleading because only about fourteen acres of bald rock are exposed.

But what the Flat Creek attraction features is an environmental wonderland with its unusual granite outcrop, the largest in South Carolina. At one time this rock provided the foundation for many surrounding houses. Now it provides habitat for wildlife and some species of rare plants.

Many of the rare plants that make their home at Forty Acre Rock do so in the pools of water found in the granite's indentions.

During dry spells the seeds survive and then flourish when the pools fill again. Spring is the best time to view the blooming of these plants.

Though the place appears like a desert in the fall and winter, there is one plant that makes its presence known in the fall.

The portulaca blooms underneath the gnarled cedar trees, said Doug Rainer, who

teaches biology at Wofford College.

"Cedars release a high level of calcium whereas most other trees tend to hold their calcium," said Rainer, who was formerly with the S.C. Wildlife Department.

Rainer often takes his classes on field trips to the rock to study the rare ecosystems and to help keep the area clean. "It's very difficult to manage in that people abuse this area by spray painting the rocks, cutting trees, and, riding vehicles over the rock," said Rainer.

RATIONALE

The Forty Acre Rock Study Site is an excellent example of a granite outcropping in the Piedmont of South Carolina. Many such rock exposures occur throughout the region, including the Winnsboro Blue Granite in Fairfield County, which is mined heavily as an economic resource and which has been designated as the official State Rock. Although Forty Acre Rock is not quarried, it represents a valuable resource nonetheless. As part of the Flat Creek Preserve, the granite is home to several species of rare plants and offers a truly unique biological habitat. The site is also near the boundary of the Sandhills and Piedmont regions and clearly illustrates landform features characteristic to each. Forty Acre Rock is not advertised as a state tourist attraction because of the sensitive and fragile nature of the ecosystem, although many school groups and other educational agencies do take field trips there. Much of the site is preserved in its natural state and features wetlands, unique geologic features such as the Great Diabase Dike, and a variety of land uses typical of the Piedmont Region.

Brief Site Description

Introduction

In reality, Forty Acre Rock covers only fourteen acres of ground. Even so, it still qualifies as the largest single exposure of granite rock in South Carolina. A hiking trail is maintained by the Nature Conservancy, which manages the area as part of the Heritage Trust Program. The trail starts in the Valley of Flat Creek, runs past a **wetland** associated with a large beaver pond, and slowly winds its way gradually uphill until it reaches some large waterfalls and several caves (which are really small openings eroded out between resistant granite layers) near the top of the rock exposure. Along the way, a hiker will pass through wooded areas, open fields beneath a power line, floodplains of small **meandering** streams, geologically important exposures of diabase dike rock, and several areas of bare granite rock.

Just to the east of the vast expanse of granite is the Sandhills Region, which lies on top of the granite and is easily recognized by the presence of loose, white, sandy soil. To the west lies the Flat Creek Valley which has cut below the overlying Sandhills layers to expose typical Piedmont rock exposures. The granite itself stands high above the valley, but slopes gradually, and in a few places steeply, downhill toward Flat Creek. Chemical weathering of the granite has produced shallow depressions in the rock which fill with water during rainstorms and are populated by several species of rare plants. In between rainstorms, these depressions are drier than a desert. Agriculture is a major land use outside of the Flat Creek Preserve boundaries, as is logging.

The Devil's Cave and His Footprint

By Christy Clonts

If you ever go to Forty Acre Rock, be sure to look for the Devil's Cave and the Devil's Footprint. My husband's Uncle Bob says that the Devil's Footprint is a foot shaped indentation in the rock just outside the entrance to the Devil's Cave. Sometimes the indentation is so slight that you can't find it. Then another time it will be deep and clear. The sharpness of the print wears away with time and erosion, but before it completely disappears the print mysteriously resurfaces. Uncle Bob says that every 10 years the devil comes back and reprints it. The footprint is a

warning to stay away from the cave which has a mystery of its own.

Many a dog has been lost in Devil's Cave. The cave narrows quickly so while people can go in, they can't go in very far. A dog, on the other hand, can keep following the narrow tunnel deeper and deeper. Dogs that go in never come out. Uncle Bob had a dog that followed him into Devil's Cave and no matter how much he whistled and hollered, that dog never would come out. After several hours he gave up and went home. He said a dog would always come home when he got hungry. But the dog didn't come home that night or the next, or the next week. Uncle Bob decided those stories about Devil's Cave must be true.

Two months later an acquaintance from the community dropped by Uncle Bob's house and said that he had seen a dog that looked just like Uncle Bob's while he was visiting relatives over in Winnsboro county. When he asked the people where they got the dog, he was told it had just shown up at their back door hungry and filthy a few weeks back. Uncle Bob went with his friend to check out this dog and sure enough it was his.

He has told this story many times through the years and afterwards he has been told of the same thing happening to other dogs. Locals think that there must be another opening to the cave in the next county because that is where the lost dogs always show up. Devil's Cave is a great place to visit, but you might want to leave your dog at home!

The Great Diabase Dike of South Carolina

Just south of Forty Acre Rock lies a long, narrow wooded ridge composed of diabase, a dark, basalt-like rock commonly found in areas which have experienced volcanic activity in the past. Diabase usually forms as the result of an igneous intrusion of high temperature magma (underground lava) into the surrounding rocks. Sometimes the intrusion reaches the surface and volcanoes form from the erupting lava. Other times, the magma does not reach the surface and slowly cools in place, underground, forming a dense, crystalline mass. When the intrusion is long and narrow in shape, it is referred to as a dike. Several of these dikes appear in the Forty Acre Rock Study Site area, and throughout the Piedmont, but the largest and most easily recognized is referred to as the Great Diabase Dike of South Carolina. It is about 35 miles long and close to 1,000 feet thick in places. It usually shows up on the landscape as a low ridge because the crystalline diabase is more resistant to erosion than the surrounding Piedmont rocks. Because of the ridge's naturally dense vegetation and tree cover, the rock is visible at the surface only along roadcuts and streams where the overlying soil and

vegetation have been removed. The best exposure of diabase in the area is found along U.S. Hwy. 601 one mile north of the town of Midway.

About 200 million years ago, geologists speculate that a huge supercontinent, called Pangea, existed on the earth, with North America and South America connected to Africa and Europe. There was no Atlantic Ocean at that time. Due to a massive buildup of heat within the earth, beneath the supercontinent, the surface crust all along the east coast of present day North America was pushed upward and stretched tight, sometimes to the breaking point. As a result, many fractures and faults began to develop and formed a series of fault basins extending from South Carolina to New England. Because these basins formed during the Triassic Period of geologic time, they are usually referred to as Triassic Basins. One such basin is exposed at the ground surface nearby in the northern part of Chesterfield County. Many of the fractures served as passageways for hot liquid rock which later cooled to form the diabase dikes. Once the Atlantic Ocean began to open up, volcanic activity in South Carolina came to an end and subsequent erosion has removed any land surface volcanoes which might have existed at that time.

**Forty Acre Rock Heritage Preserve
Lancaster Co., SC
March 22, 2014**

This list was produced by SCAN from sightings produced by SCAN members and is subject to revision as needed. An asterisk (*) indicates a new sighting for SCAN. Send any changes or corrections to Jan Ciegler at jciegler@sc.rr.com. Please indicate exactly to which flora/fauna list you are referring. Thank you.

LICHENS

Cladonia evansii

FLORA

Common Running-cedar

Diphasiastrum digitatum

Quillwort

Isoetes sp.

Ebony Spleenwort

Asplenium platyneuron

Christmas Fern

Polystichum acrostichoides

Resurrection Fern

Pleopeltis polypodioides
michauxiana

Shortleaf Pine

Pinus echinata

Loblolly Pine

Pinus taeda

Eastern Red Cedar

Juniperus virginiana virginiana

Giant Cane

Arundinaria gigantea

Dimpled Trout Lily

Erythronium umbilicatum
umbilicatum

False Garlic

Nothoscordum bivalve

Curlyleaf Yucca

Yucca filamentosa

Catbrier

Smilax bona-nox

Whiteleaf Greenbrier

Smilax glauca

Bamboo-vine

Smilax laurifolia

Common Greenbrier

Smilax rotundifolia

Jackson-brier

Smilax smallii

Puttyroot

Aplectrum hyemale

Craneffly Orchid

Tipularia discolor

Tulip-tree

Liriodendron tulipifera

Spicebush

Lindera benzoin

Sassafras

Sassafras albidum

Little Brown Jug

Hexastylis arifolia

Round-lobed Hepatica

Anemone americana

Bloodroot

Sanguinaria canadensis

Short-spurred Corydalis

Corydalis flavula

Sycamore

Platanus occidentalis occidentalis

Sweet Gum

Liquidambar styraciflua

Winged Elm

Ulmus alata

Shagbark Hickory

Carya ovata

Mockernut Hickory

Carya tomentosa

American Beech

Fagus grandifolia

White Oak

Quercus alba

Southern Red Oak

Quercus falcata

Sand Laurel Oak

Quercus hemisphaerica

Rock Chestnut Oak

Quercus montana

Chinquapin Oak

Quercus muehlenbergii

Water Oak

Quercus nigra

Red Oak

Quercus rubra

Post Oak

Quercus stellata

American Hornbeam

Carpinus caroliniana

Prickly-pear

Opuntia humifusa

Appalachian Sandwort

Minuartia glabra

Rock Sandwort

Minuartia uniflora

Common Chickweed

Stellaria media

Pineweed

Hypericum gentianoides

Lloyd's St.-John's-wort

Hypericum lloydii

Dooryard Violet

Viola sororia

Common Smooth Rockcress

Boechera laevigata laevigata

Hairy Bittercress

Cardamine hirsuta

Spotted Wintergreen

Chimaphila maculata

Sparkleberry

Vaccinium arboreum

Elliott's Blueberry

Vaccinium elliotii

Elf-orpine

Diamorpha smallii

Puck's Orpine

Sedum pusillum

Black Cherry

Prunus serotina serotina

Eastern Redbud

Cercis canadensis canadensis

Flowering Dogwood

Cornus florida

American Mistletoe

Phoradendron leucarpum
leucarpum

Hearts-a-burstin'-with-love

Euonymus americanus

American Holly

Ilex opaca opaca

Box Elder

Acer negundo

Red Maple

Acer rubrum

Painted Buckeye

Aesculus sylvatica

Winged Sumac

Rhus copallinum

Smooth Sumac

Rhus glabra

Eastern Poison Ivy

Toxicodendron radicans radicans

Carolina Jessamine

Gelsemium sempervirens

Wild Comfrey

Cynoglossum virginianum
virginianum

Pool-sprite

Amphianthus pusillus

Common Toadflax

Nuttallanthus canadensis

Woolly Mullein

Verbascum thapsus

Cross-vine

Bignonia capreolata

Trumpet-creeper

Campsis radicans

Tiny Bluet

Houstonia pusilla

Japanese Honeysuckle

Lonicera japonica

Coral Honeysuckle

Lonicera sempervirens

Southern Black Haw

Viburnum rufidulum

Green-and-gold

Chrysogonum virginianum

Thistle

Cirsium sp.

Virginia Dwarf-dandelion

Krigia virginica

Woolly Ragwort

Packera tomentosa

Grass-leaved Golden-aster

Pityopsis graminifolia graminifolia

Black-knot

Apiosporina morbosa

FAUNA

Chinese Mantid (egg case)

Tenodera aridifolia sinensis

Southeastern Blueberry Bee

Habropoda laboriosa

Large Carpenter Bee

Xylocopa virginica virginica

Honey Bee

Apis mellifera

Falcate Orangetip

Anthocharis midea

Sleepy Orange

Abaeis nicippe

Spring Azure (butterfly)

Celastrina ladon

Mourning Cloak

Nymphalis antiopa

Polyphemus Moth (cocoon)

Antheraea polyphemus

Southern Cricket Frog

Acris gryllus

Spring Peeper

Pseudacris crucifer

Southern Leopard Frog

Lithobates utricularia

Eastern Fence Lizard

Sceloporus undulatus

Black Racer

Coluber constrictor

Red-bellied Snake

Storeria occipitomaculata

Great Blue Heron

Ardea herodias

Canada Goose

Branta canadensis

Killdeer

Charadrius vociferus

Barred Owl

Strix varia

Red-bellied Woodpecker

Melanerpes carolinus

Downy Woodpecker

Picoides pubescens

Pileated Woodpecker

Dryocopus pileatus

Blue Jay

Cyanocitta cristata

American Crow

Corvus brachyrhynchos

Carolina Chickadee

Parus carolinensis

Blue-headed Vireo

Vireo solitarius

Black-and-white Warbler

Mniotilta varia

Pine Warbler

Dendroica pinus

Northern Cardinal

Cardinalis cardinalis

White-tailed Deer (tracks)

Odocoileus virginianus