

8. ISAAC TYSON & THE SCOTT MINE

Chromite Conflict at the Scott Mine

Because of the rich mineral deposits in the Serpentine Barrens, lawsuits and controversy were part of the mining process. Here is an example of the court proceedings over the Scott Mine between 1832 and 1835.

June 7, 1826 - William Scott filed a petition in the Orphans Court Decedents to receive 213 acres of land in West Nottingham Township – **paid \$5,000**

February 8, 1832 - William Scott entered a complaint of trespass in the Chester County Court of Common Pleas and a warrant was issued against Isaac Tyson, Jr and company. In supporting documents it shows that during this trespass Tyson, Jr. dug up chromite without permission from Scott “of great value and exceeding the value of six hundred dollars”.

May 3, 1834 - Scott made contract with Tyson, Jr. for 150 tons of chrome at \$20 per ton.

March 26, 1835 – Again, Scott made an agreement with Isaac Tyson, Jr. to deliver 200 tons of chrome before April 1, 1836 to Tyson at a specified price. This agreement was nullified by the July 4, 1835 lease.

July 4, 1835 - Isaac Tyson, Jr. leased the chromite vein (a vein is a deposit of ore in this case chromite) at the Scott Mine site for \$1,000. He also received the rights to build a house for workmen and to have an access road to the public road nearby. This lease nullified the March 26, 1835 lease except Scott would be paid for any chromite he had already extracted.

September 8, 1835 - Isaac Tyson, Jr. had a disagreement with Scott. It was reported that William Scott opened another chromite mine nearby after leasing the particular vein to Tyson. This mine apparently drained into Tyson’s mine and after Tyson lost the resulting litigation, he closed his mine.



NOTTINGHAM COUNTY PARK SERPENTINE BARRENS NATIONAL NATURAL LANDMARK HERITAGE HIKE



Chester County Board of Commissioners
Chester County Facilities & Parks

Welcome to Nottingham County Park's Heritage Loop Trail!

In the winter of 2008, Chester County's Nottingham Park's Serpentine Barrens were named a National Natural Landmark (NNL) by the United States Department of the Interior. The NNL Program recognizes and encourages the conservation of outstanding examples of our country's natural history. It is the only natural areas program of national scope



that identifies and recognizes the best examples of biological and geological features in both public and private ownership. NNLs are designated by the Secretary of the Interior, with the owner's approval. In 2008, fewer than 600 sites had passed the rigorous evaluation process to be designated. The National Park Service administers the NNL Program.

Today, we hope you will see why the barrens are so unusual. In less than ten strides you will walk from the deciduous forest and fertile fields that cover most of Chester County into a rocky, barren landscape

reminiscent of the Zane Grey novels of western adventure.

Just like America's west, Nottingham's Serpentine Barrens are home to rare plant and animal species. The barrens also have a history of lawsuits and "land grabbing" disputes over the rich minerals found only in the serpentine rock outcropping forming the landscape.

If you would like additional information, please stop by our Park Office.

7. PLACER CHROMITE

The Black Run flows northwestward through Chester County into the Octoraro Creek from the Scott-Engine-Kirk mines area. This area was found to have abundant disseminated chromite in the serpentine with *placer chromite* deposits along the stream's course. The valley is broad and flat and favors the accumulation of chrome-bearing sands. (Note: It is unusual that the creek flows northwestward, most waterways in the United States run south/southwest.)

DID YOU KNOW?

Placer deposits are formed by a number of minerals in addition to chromite including gold. Erosion creates a gravel form of the mineral which settles in waterways and forms the placer deposit.

Buddles were most frequently used to process the *placer chromite* in the 1800's. A buddle is an apparatus on which crushed ore is washed. This is the simplest method of separating valuable placer ore from other material. This is a very tedious process, particularly when the individual particles are small. A buddle relies on the various minerals having different densities, causing them to collect in different places. Metallic minerals, such as chromite, are heavier and drop out of suspension more quickly than the lighter ones carried further by a stream of water.

Tailings are the materials left over after separating the valuable fraction from the worthless fraction of an ore.

Mortimer Bye the "Chromite King of Chester County" was so named in 1894 apparently for his extensive placer chromite mining operations during the late nineteenth century. In 1874, the former chromite mining superintendent for Moro Phillips of Philadelphia, produced chromite from a placer deposit on the Black Run.

During World War I, the demand for chromite caused a mill to be built here on the Black Run to process placer deposits. They apparently were still experimenting when the war ended. The remains of that mill are still visible at this site. Other attempts at mineral leasing reportedly occurred in the area without production of ore.

6. FELDSPAR MINING HISTORY

Feldspar is a group of nonmetallic minerals used in ceramics. During a brief mining period from 1898 to the early 20th century; southeastern PA was one of the three largest producers of feldspar in the United States. Uses ranged from false teeth and porcelain, to pottery, tiles, scouring soaps, and glass manufacturing.

The Mystery Hole, also known as the Brandywine Quarry, is one of the feldspar quarries that was mined between 1897 to 1908 by twenty immigrants from Fera San Martino, Abruzzo, Italy.



DID YOU KNOW? In August of 1963, members of the Southern Chester County Scuba Club discovered a 1929 vintage Graham Paige roadster, almost in fair condition in the Mystery Hole. The Daily Local News article stated that the roadster “was resting under 60 feet of water, about 75 feet from the edge of the hole.” Records showed that just before the operation was abandoned, miners had started a 20 foot square shaft at the center of the hole. Work had progressed another 20 feet before a spring bubbled through and flooded the hole. The roadster somehow managed to plunge down that shaft, where the divers recovered it.

1. SOIL AND GEOLOGY



Serpentine is a rare, light-green colored rock found in just a few, widely-scattered places in the world. It has been quarried for building stone and mined for talc, asbestos, chromium and other minerals.

It is a geological anomaly because it formed deep beneath ancient ocean bottoms but became “perched” on the continents by movements of the earth’s crustal plates.

Serpentine soils are so low in essential nutrients and so high in certain metals toxic to many plants, including nickel and chromium, that most ordinary plants do not grow on serpentine. Early settlers named these areas “barrens” because they were unsuitable for farming. The shallow infertile soil limited the amount of plants and animals able to survive and what little vegetation existed was stunted. Therefore, the whole area to those first farmers looked “barren.” The name remains appropriate today.

The shallow soil and underlying rock of this harsh environment cannot absorb and hold water either. Plant species either adapt to these dry conditions or cease to exist. As you walk, notice the difference in plant life along the Black Run which flows through the park and the dry hillsides. You can also see evidence of water erosion, one of the most serious problems in a barren. You will notice the deep gullies and ditches that form near and along the trail.

2. RARE PLANTS

The serpentine barrens are home to more than a dozen kinds of plants that are considered rare or in danger of disappearing completely from Pennsylvania. The sun-baked, high-temperature conditions on bare serpentine rock and gravel make these sites “islands” for desert-like habitat of rare, unusual plant species. These plants are poor competitors on ordinary sites; but they have developed special adaptations to withstand heat and drought, such as small leaves,

shallow roots and stunted growth



Pictured left, the Serpentine Aster (*Aster depauperatus*) lives only on serpentine barrens in Pennsylvania and Maryland and nowhere else in the world.

The round-leafed Fameflower (*Talinum teretifolium*) shown below grows on isolated rock exposures from the serpentine

outcrops in Pennsylvania and Maryland; to the granite and sandstone outcroppings in Alabama and northwest Georgia. The other four *Talinum* species are scattered across the southeastern United States. This rare wildflower is found only in the driest sandy soil. The Fameflower is a succulent native plant that blooms for a short time in the late afternoon each day. It blooms for a short time to conserve its moisture in order to survive the dry conditions.



Note: A complete catalogue of all plant species in the park is sold at the park office.

5. WHY SERPENTINE?

Distinctive light-green stone farmhouses, churches and public buildings are found in the PA counties of Chester, Delaware, Lancaster and Philadelphia. The reason for the unusual color is the use of serpentine rock as a building material in the 18th, 19th and early 20th centuries. Pictured here is the Nottingham Presbyterian Church, which is located on Route 272 close to the park. It was constructed of serpentine stone quarried at Nottingham County Park.

Serpentine is no longer used as a building material due to the presence of asbestos when cut and the rapid erosion when exposed to the elements and air pollution in cities.



The origin of the name “Serpentine” is widely disputed. At least four theories attribute the name to: 1) the serpent-like colors and patterns, 2) the myth that these gemstones were effective protection from venomous snake bites, 3) a snake that lived on an outcropping of rocks in Italy, and 4) the white veins in the rock that look like small snakes.

The color of precious Serpentine is primarily a shade of green, varying from yellowish-green to blackish-green and sometimes brown, black, white and even blue. From a building material used in ancient Rome, by tribes in New Zealand and contemporary Afghanistan, serpentine rock has been utilized worldwide. It is also the state rock of California.

Note: Just beyond the station marker is an example of a test pit.

4. PROTECTING OUR RESOURCES



Natural Resources: Preserving the barrens is hard work! Prescribed burning on these barrens will help keep natural fuel loads low so the disastrous wildfires which the barrens are prone to, will be less of a threat to surrounding forests and homes.

Other natural resource management practices include mechanical and chemical treatment; logging, canopy thinning, mowing, and soil scraping. Here at Nottingham our problem plant species is Smilax or “green briar”. It is a native plant; however, when a native plant grows out of control it is referred to as a “noxious weed”, as is the case in our serpentine barrens.

Historic Resources: The unique element of serpentine barrens is the serpentine rock itself. This rock formation attracted industry into the area which is now part of the park. Serpentine rock and the mineral elements of chromite and feldspar were mined here starting in the early 1800’s. The numerous quarries and test pits located within Nottingham County Park are evidence of this mining history. Protecting and interpreting this important part of Chester County’s history is part of the educational programming that is developed at the park. Archaeological and visible elements of the mining story have been identified and well researched. We will explore this history and the cultural use of the park’s natural resources in the next part of our walk.

3. ECOSYSTEM

The Nottingham Barrens is one of the largest serpentine barrens in the eastern United States. It contains the largest areas of true prairie (natural communities dominated by grasses and scattered trees) in Pennsylvania. A unique aspect of the barrens is the variety of “mini-ecosystems” contained within the entire ecosystems. One of the most interesting is called a Savannah.



A Savannah is an area that is dominated by grasses and scattered trees. Savannahs exist throughout the world dominating the continent of Africa. They are found in India and the northern part

of South America. Most Savannahs exist because of sparse rainfall and are tropical grasslands. Rainfall in this ecosystem is usually 20-60 inches a year, and can be very seasonal (usually falling within a couple weeks). The savannah ecosystem at Nottingham exists because of the shallow soil and rock discussed at Station 1, which cannot hold water.

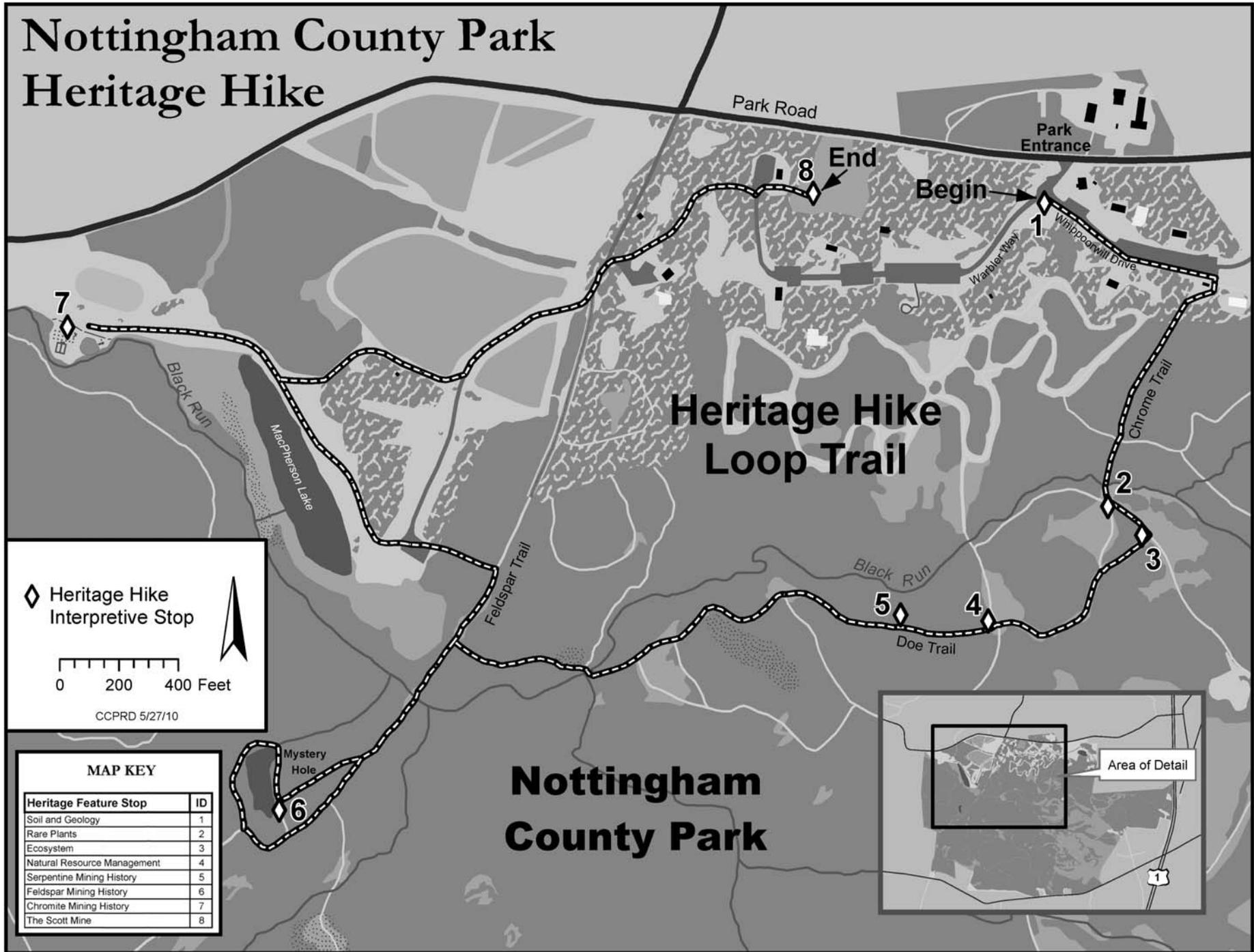
In the Savannah ecosystem, communities of rare and disjunctive plant species exist because of the unusual bedrock. Many of the plant species at Nottingham are also considered “serotinus” because they depend upon occasional fires for their persistence. The dominant plants, prairie grasses and pitch pines, have special adaptations that allow them to live through a fire. Even though their leaves may burn away, they sprout new leaves quickly and their seeds germinate by the heat of the fire.

Prairie grass species:

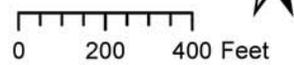
- Big Blue Stem
- Little Blue Stem
- Indian Grass
- Arrowfeather Grass
- Prairie Dropseed



Nottingham County Park Heritage Hike



◆ Heritage Hike Interpretive Stop



CCPRD 5/27/10

MAP KEY

Heritage Feature Stop	ID
Soil and Geology	1
Rare Plants	2
Ecosystem	3
Natural Resource Management	4
Serpentine Mining History	5
Feldspar Mining History	6
Chromite Mining History	7
The Scott Mine	8

Nottingham County Park

