

An Overview of

# THREE FALLS WOODS

Highlights of the  
many features  
of remarkable  
Three Falls Woods

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# THREE FALLS WOODS



Cover image, this image, and numerous others throughout this document are courtesy of photographer Phil Bonn. ©

When foliage is absent in fall and winter, it is possible to stand in one spot and view all three waterfalls at once.

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## GEOLOGY IS DESTINY

Three Falls Woods is a hidden geologic treasure – a classic prototype of extreme karst topography. About 400 million years ago, this area was covered by a vast inland sea. As ancient crustaceous creatures died and fell to the bottom, their shells settled and hardened into layers of calcium-rich sediment, which evolved over the eons into the limestone we know today. During the last ice age 16,000-13,000 years ago, huge glaciers and ice sheets melted and shifted across the land, causing dramatic changes. These enormous glacial movements rearranged the local landscape, eroding rock surfaces, carving out lakes and ravines, and bulldozing the local limestone into massive ridges and cliff formations.

**Three Falls Woods is the largest local unprotected remnant of an ancient ridge formation** – known as *The Onondaga Escarpment*, little sister to the Niagara Escarpment. The local Dewitt/Jamesville/Manlius region was renown for its prominent cliff formations, which originally dominated the area before widespread mining destruction.



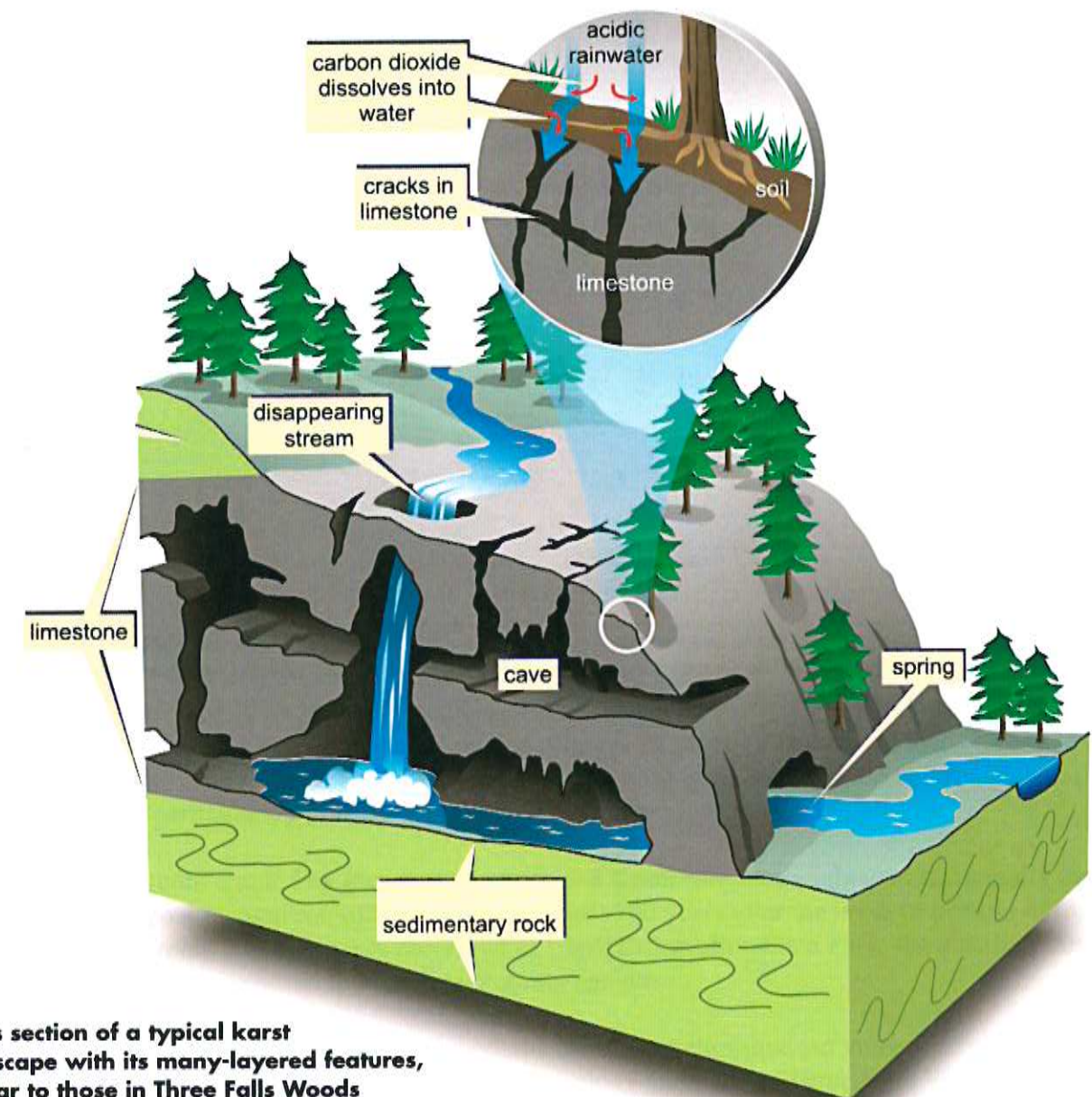
Hydrogeologist Paul Rubin pointing out various strata in the local limestone.

## CLASSIC KARST TOPOGRAPHY

### What is Karst?

Limestone contains significant amounts of calcium carbonate, resulting in stone that is especially pervious - subject to water erosion and dissolution over time. Weak acids found naturally in rain and soil water slowly dissolve the tiny fractures in this soluble limestone bedrock, enlarging the joints and bedding planes. Karst is the geologic term for these ancient evolving limestone landscapes, still in the process of natural erosion through gradual dissolution.

**Karst has two faces** – above ground and below ground, seen and unseen. Above ground and over time, karst dissolution creates ridges, cliffs, rock towers, fissures, sinkholes, limestone pavements, and other remarkable surface forms. Underground, in areas of extreme karst, the gradual dissolution of limestone can carve out entire hydrology systems. These can contain numerous channels, caves, underground streams, aquifers, etc. with impressive water-holding and water-carrying capacities, capable of affecting far-reaching areas. **Three Falls Woods is a classic example – a living classroom of extreme karst topography.**



Cross section of a typical karst landscape with its many-layered features, similar to those in Three Falls Woods

## WHAT IS THE HISTORY OF THIS AREA?

Not long after the first settlers arrived, they began mining the local cliffs, first for their own needs, then driven by the incessant call for stone to build large portions of the Erie Canal. As a result, a major open-pit mine was established along the Escarpment here, generally known as the **Jamesville Quarry** – which has been in continuous operation under various ownerships for nearly 200 years. Later, stone from this quarry was used in massive amounts to produce soda ash, a main ingredient in glass, plastics, dyes, etc. Soda ash was synthetically produced from salt and limestone in a process known as the Solvay process, for which the area of New York was famous.

Over the past two centuries, continuous quarrying has all but obliterated most of the area's dramatic cliffs, caves, water-features, and special ecology. Where a spectacular varied landscape once provided lush habitats for countless species of plants and animals, there is now a vast 2000-acre void. From above, this part of the Escarpment appears as an enormous crater. Every day, hundreds of trucks still haul tons of aggregate and stone products out of the quarry, as 'resource removal' continues.



**Aerial view of one section of the Jamesville Quarry open pit mine, with remnants of ancient water features still visible as greenish depressions in the rockbed.**

## WHERE DOES THREE FALLS WOODS FIT IN?

### A Look West of The Jamesville Quarry

In 1915, to satisfy an increasing demand for limestone to make soda ash, the mammoth Jamesville Quarry (then owned by the Solvay Process Co.) planned to expand its mining operations to the west. Far-sighted heiress Mary Clark Thompson recognized the crucial need to save as much of the remaining unique Escarpment lands as possible. Her original purchase and gift to NY State of a 75-acre tract saved the ancient glacial plunge pool and rare plant life west of the quarry from inevitable destruction. Over the years, that preserved area has been expanded to 377 acres, known as **Clark Reservation State Park**.



### A Look East of The Jamesville Quarry

On the other side of the quarry, an extension of the same rocky Escarpment lands remained in its natural state - but exposed to potential expansion of the commercial Jamesville Quarry. In 1981, Allied Inc. owned the quarry, along with these untapped eastern lands. Having depleted the layers of high-quality kilnstone in their main pit in the Town of Dewitt, Allied moved to expand the mine to their adjacent lands lying in the Town of Manlius.

A heated controversy arose. In the end, strong citizen protest persuaded the Town of Manlius to strike a deal with Allied. In exchange for permission to mine an adjoining 90-acre parcel in the Town of Manlius, Allied agreed to leave the rest of their easternmost acreage across the road undisturbed, to serve as permanent buffer lands to nearby residential areas. In the resulting 1981 Covenant between Allied and the Town of Manlius, it was agreed that this remaining land was "to be left in its natural state". Today, that acreage forms the major portion of what is known as **Three Falls Woods**. Despite such promises, its future is jeopardized.

In 1989, these buffer lands were quietly purchased from Allied by a developer with plans. Despite various attempts, development has not yet occurred on this original remnant of the Escarpment - thanks to ongoing citizen pressure. However, **Three Falls Woods'** intact survival remains uncertain at best - unless the land can be purchased and permanently protected as the nature preserve it already is.

Continued citizen concern, led by **Manlius Greenspace Coalition**, has heightened community awareness and gained municipal recognition of the area. Yet, almost 100 years after the western portion of this remarkable escarpment landscape was preserved as Clark Reservation State Park, the equally praiseworthy eastern portion remains exposed to countless ongoing dangers.

Hidden and pristine, **Three Falls Woods** is perhaps the most picturesque yet vulnerable remnant of the local ancient Escarpment. A living classroom of biology, geology and history, Three Falls Woods is in great need of swift and full preservation.

## WHAT IS THE NATURE CORRIDOR?

Today, the still active Jamesville Quarry is managed by Hanson Aggregate North America, which has merged with Heidelberg, a German mining company. The open pit is concealed behind treed berms and miles of chain-link fence. Whether observing this vast crater from the ground or aerial view, it is difficult to imagine the huge cavity in its original natural splendor – a geological wonder of spectacular beauty, with rich biodiversity and pristine waters. Though quarrying activities have destroyed nearly 2000 acres of this amazing formation, what remains on either side is still monumental.

Amazingly, the two large 'end-pieces' - **Clark Reservation State Park** to the west and **Three Falls Woods** to the east - have survived the destruction. These end-pieces are connected by a contiguous collar of greenspace (both private and protected lands) running along the northern rim of the quarry.

Recognized today as the **Onondaga Escarpment Nature Corridor**, this natural area spans over seven miles of contiguous karst topography. These adjoining components function as a massive natural bridge, a connective greenway where wildlife abounds and native plants flourish. Early on, **Manlius Greenspace Coalition** recognized the need to raise awareness of this essential natural pathway, to insure that its wilderness qualities be kept intact and its trails preserved. "**MGC**" was the prime mover in promoting official recognition of this previously overlooked band of impressive greenspace.

Subsequently, in 2005 the Nature Corridor was included in the Supplemental List of the New York State Open Space Plan. Then in 2009, the Nature Corridor was elevated to **New York State's Open Space Priority List**, which identifies NY State's natural areas of greatest integrity and significance.



**ONONDAGA ESCARPMENT NATURE CORRIDOR**

## THREE FALLS WOODS IS A CRITICAL ENVIRONMENTAL AREA

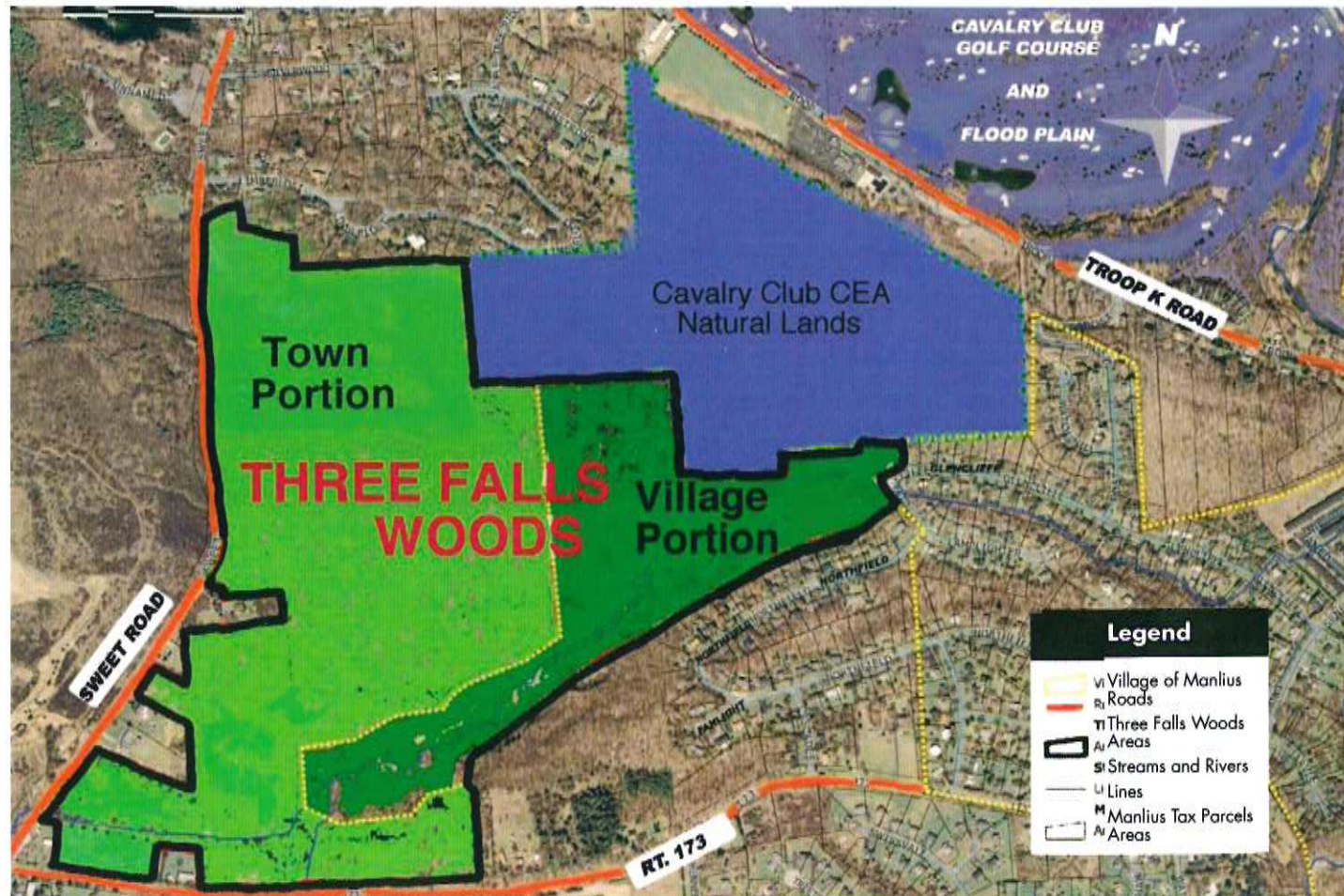
In June of 2007, the Village of Manlius designated their 41.53-acre portion of Three Falls Woods as a Critical Environmental Area.

In August of 2009, the Town of Manlius designated their 132.22-acre portion of Three Falls Woods as a Critical Environmental Area. (100 acres of adjacent natural lands owned by the Cavalry Country Club was given CEA designation at that time as well.)

New York State's designation of "Critical Environmental Area" (CEA) is a rare and hard-won honor. Each designation must first be granted by the municipality in which the area is located. Since Three Falls Woods' 175-acre tract falls within two municipal jurisdictions, two separate Critical Environmental Area designations were required. This accounts for references to either 'Lower' Three Falls Woods (Village portion), or 'Upper' Three Falls Woods (Town portion).

The CEA qualification process is thorough and painstaking. Proposed areas must meet strict standards in at least 1 of 4 specific criteria. **Remarkably, both the Lower and Upper Portions not only meet, but EXCEED all four State criteria.** After the considerable research and scientific evidence was presented, a public hearing took place, followed by a majority administrative vote. In addition, both municipalities added specific local laws reinforcing their CEA resolutions. Finally, all documentation was submitted to the State for official ratification. (Note: NY State CEA designations granted to Lower and Upper Three Falls Woods are only the second and third CEA's in all of Onondaga County.)

Beyond separate municipal jurisdictions and CEA designations, Three Falls Woods remains an entity in both form and function – an intact unit of exceptional karst geology, hydrology and ecology.



## A WALK THROUGH THE WOODS: UNIQUE FEATURES IN LOWER THREE FALLS WOODS

### Location

Three Falls Woods is located in both the Village and Town of Manlius, in Onondaga County, New York.

### Size

Three Falls Woods consists of approximately 175 acres of extraordinary karst terrain with dramatic geology, site-specific ecology, unique history, and scenic water features.

## IN LOWER THREE FALLS WOODS—WITHIN THE GORGE MEADOW ENTRANCE

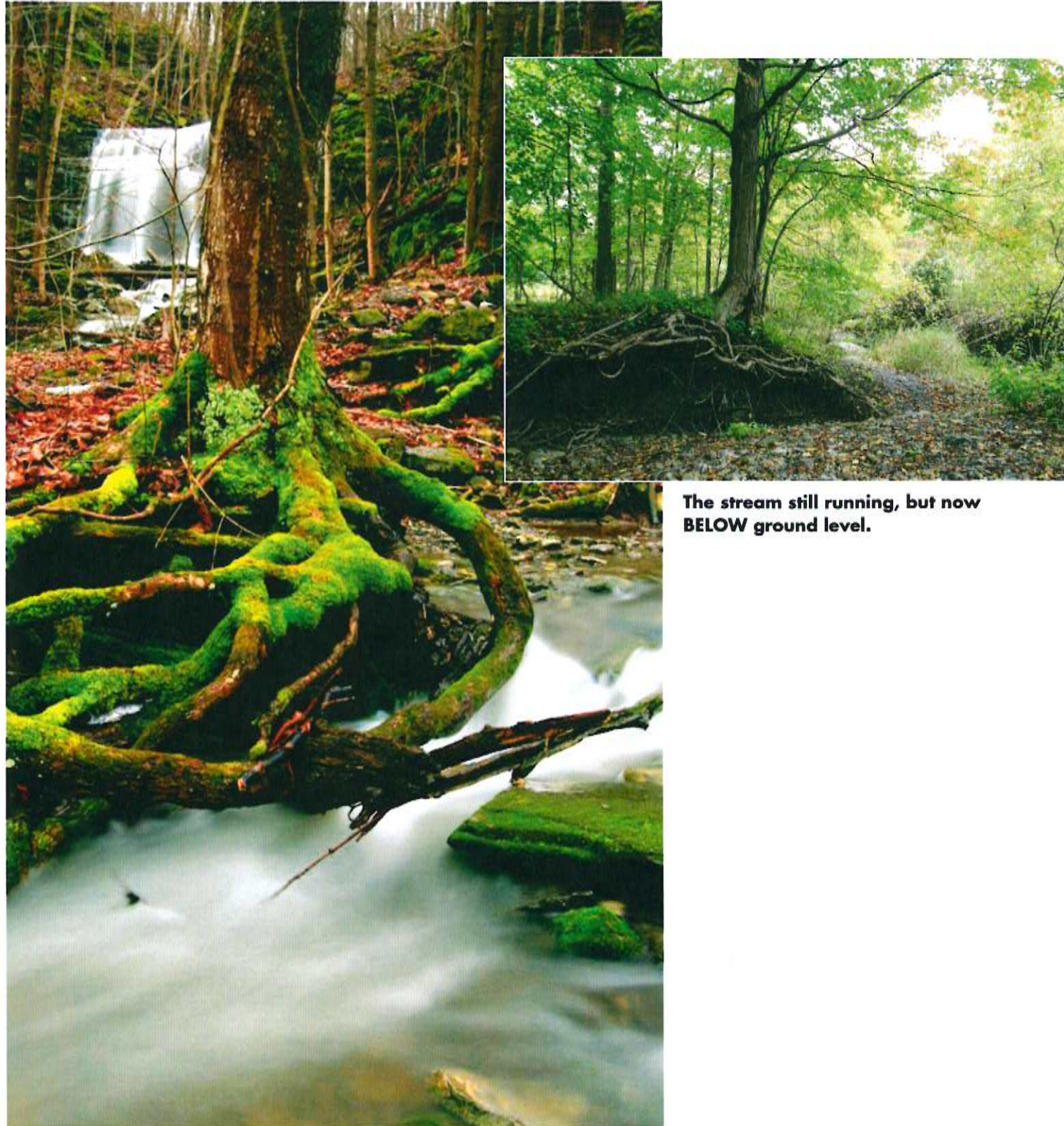
The Village portion contains a long gorge with the main entrance through a wildflower meadow/floodplain.



An open wildflower field gives no hint of the hidden rocky cliffs and water features ahead. Three Falls Woods is a study in contrasts, with surprises around every turn.

## THE DISAPPEARING STREAM

Beyond the meadow, the entrance path leads into the woods. Through this wooded area winds a classic karst feature – a ‘losing’, or disappearing stream.



The stream still running, but now **BELOW** ground level.

The karst “disappearing stream” running full force

## STAIRCASE FALLS

The easternmost falls of the trio, Staircase Falls consists of sheeting water over a progression of limestone steps with overhanging ledges and bedrock landings - complete with shallow pools of polliwogs.



## TALL TWINS FALLS

The centerpiece falls of Three Falls Woods. The name “Tall Twins” refers to the effect of water cascading on either side of a massive dividing rock in the center.



## CASCADES FALLS

This close-up shows a portion of the westernmost falls in Three Falls Woods. Water volume over each of the falls in Three Falls Woods is very much dependent on local rainfall and weather conditions. When waterflow is scarce, as in this picture, one has an opportunity to view the massive rock formations beneath the usual flow.

Geologists speculate that thousands of years ago, the entire southern rim of the gorge may have been one large semi-circular waterfall; later this may have separated into a series of seven or more, down to the three we now view.





## THE HEMLOCK BOWL

Another area of great scientific interest in the Village Portion is **The Hemlock Bowl** - a 2½-acre sinkhole/ glacial kettle-hole, filled with tall old-growth hemlocks. Here the unique humidity provided by the two-level canopy creates its own ecosystem - like a giant greenhouse, filled with hip-high ferns. (For location, see Trail Map on page 18)

## MOSS SANCTUARY

Throughout Three Falls Woods, there is an **unusual abundance of moss species** and other site-adapted plant species, some of which are State-protected and of great interest to environmental scientists and forest biologists, as well as to the environmentally concerned public. The mosses in particular, have attracted the attention of **renowned bryologist Dr. Robin Kimmerer**, whose classes have helped identify and inventory nearly 90 species of mosses so far. (Reports, working inventory, or power point on *The Mosses of Three Falls Woods* are available upon request. Dr. Kimmerer's Expert Opinion is included.)



Renowned bryologist and author Dr. Robin Kimmerer, maintains that Three Falls Woods should be preserved as a moss sanctuary for its abundance and variety of moss species alone. She states, "Sites of such prolific moss growth and diversity are quite uncommon."

## VISIT BY DR. LEOPOLD AND COLLEAGUES TO THREE FALLS WOODS JULY 24, 2008

Well-known forest biologist **Dr. Donald Leopold** and his group of seasoned biologists were intrigued to discover 19 different **state-protected botanical species** within less than 3 hours in Three Falls Woods. This is but a fraction of the suspected total, as Dr. Leopold's group was forced to terminate their search midway, due to a sudden electrical storm. They hope to resume this inventory search in the near future. Dr. Leopold says, "Populations of two fern species, i.e., glade fern and silver spleenwort, are the largest populations of these species that I have seen anywhere in New York State and beyond." The presence of such species in Three Falls Woods could provide valuable future research and educational opportunities.

Dr. Donald Leopold & Group: Dudley Raynal, Tony Eallonardo, Joe Gawronski-Salerno, Kay Hajek, Jess Riddle, Chuck Schirmer

## STATE PROTECTED SPECIES FOUND THUS FAR



white trillium



purple trillium



maidenhair fern

1. marginal wood fern; marginal shield fern – *Dryopteris marginalis*
2. Goldie's fern – *Dryopteris goldiana*
3. \* glade fern – *Athyrium pycnocarpon* (*Diplazium pycnocarpon*)
4. maidenhair fern – *Adiantum pedatum*
5. purple trillium – *Trillium erectum*
6. white trillium – *Trillium grandiflorum*
7. Christmas fern – *Polystichum acrostichoides*
8. bulblet fern – *Cystopteris bulbifera*
9. rattlesnake fern – *Botrychium virginianum*
10. ebony spleenwort – *Asplenium platyneuron*
11. maidenhair spleenwort – *Asplenium trichomanes*
12. maidenhair fern – *Adiantum pedatum*
13. \* silvery spleenwort – *Deparia acrostichoides*
14. walking fern – *Asplenium rhizophyllum*
15. fragile fern; brittle bladder fern – *Cystopteris fragilis*
16. rock polypody – *Polypodium virginianum*
17. evergreen woodfern – *Dryopteris intermedia*
18. butterfly weed – *Asclepias tuberosa*
19. bloodroot – *Sanguinaria canadensis*

\* Asterisks indicate Dr. Leopold's observation that the glade fern & silvery spleenwort populations found in Three Falls Woods comprise "...the LARGEST populations of these species that I have seen anywhere in New York State and beyond."

## HART'S TONGUE FERN, A RARE WONDER, MAY BE RETURNED TO THREE FALLS WOODS

American Hart's Tongue Fern (*Asplenium scolopendrium* L. var. *americanum*)

This legendary **federally-protected plant** is found in few places in America, but was allegedly discovered in Three Falls Woods by the renowned Mildred Faust many years ago. This makes sense, as the few remaining sites for the Hart's Tongue Fern happen to be local and quite close by, one or two actually within walking distance of Three Falls Woods.

Several experts, including Dr. Don Leopold, have assessed that there are sites within Three Falls Woods that could be ideal for re-introduction of the plant – **once Three Falls Woods is fully protected**, when the plant could be properly monitored.

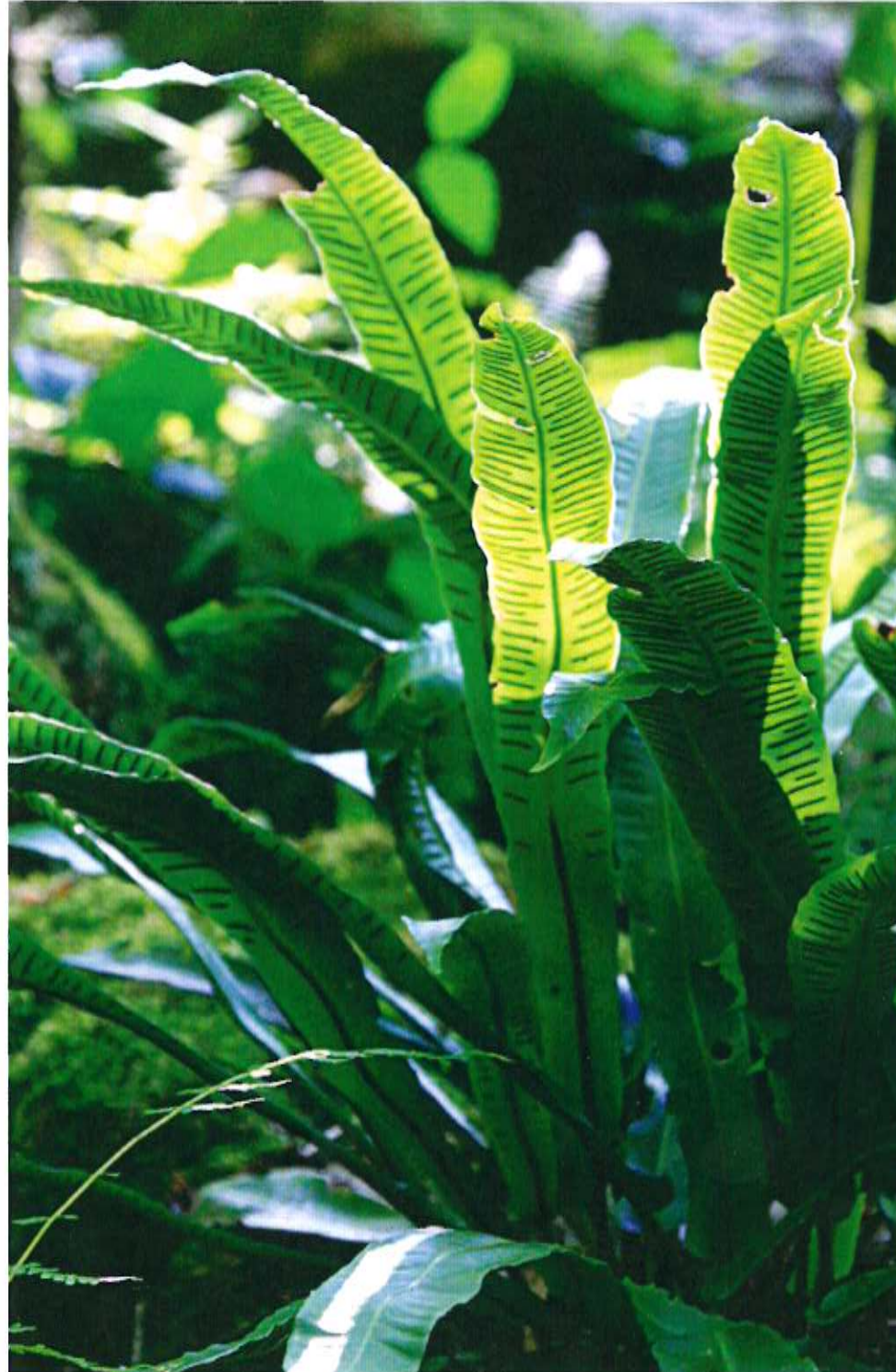


Photo of Hart's Tongue Fern taken at Clark Reservation, Jamesville, NY.

## THREE FALLS WOODS—AN OLD-GROWTH FOREST

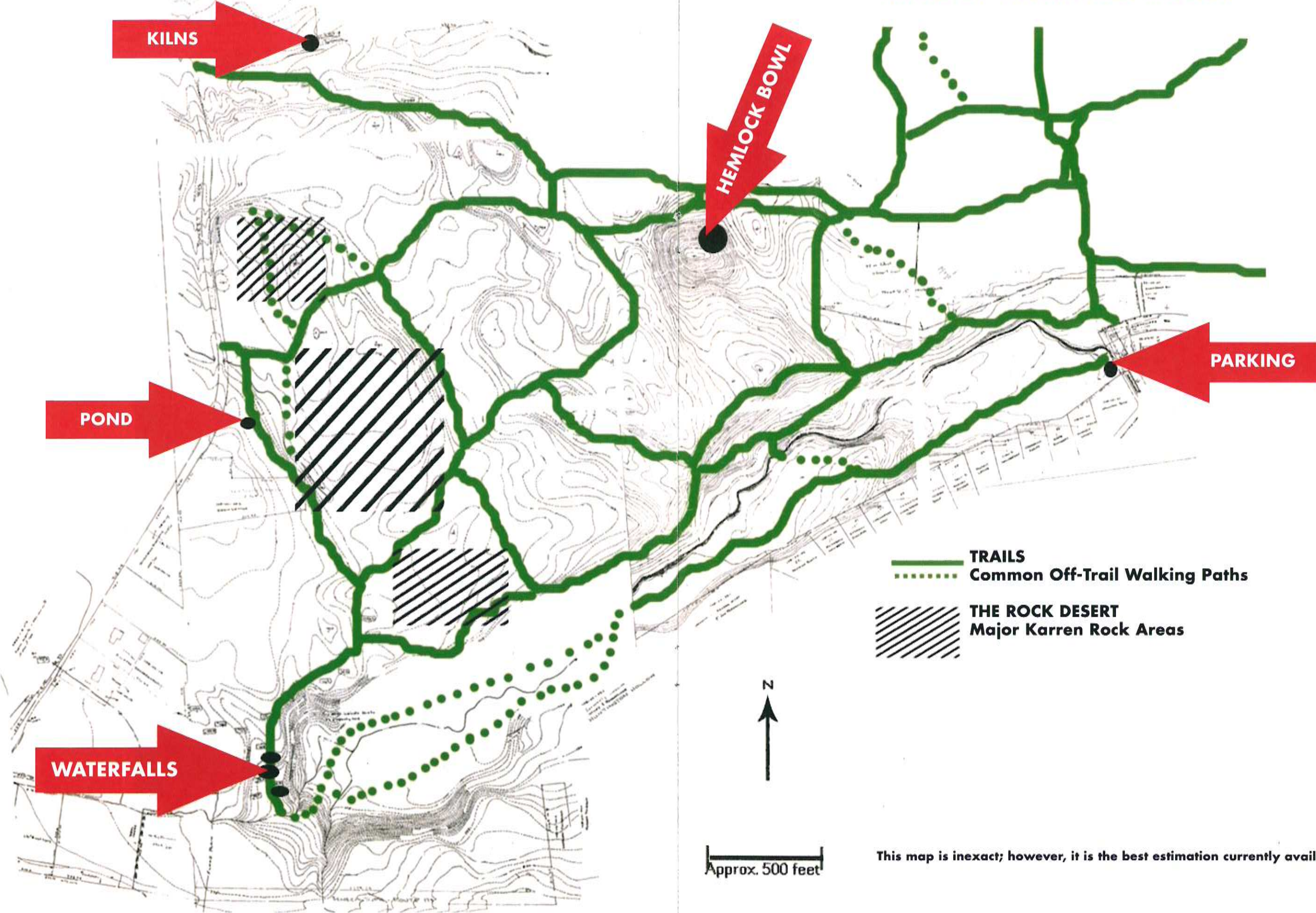
To qualify as an old-growth forest, there must be at least 40 acres of old-growth trees (150 years old or older), with at least 6-8 old-growth trees per acre.

The late Bruce Kershner – prolific author, forest ecology professor, and old-growth forest authority, visited Three Falls Woods in 2006. He concluded **this woodland is exceptional**, exceeding even his earlier

expectations. He strongly advocated that Three Falls Woods should be left undisturbed as a public nature preserve for educational purposes, retaining the existing passive (non-invasive) community hiking trails. Speaking of trails – **Three Falls Woods has over 5 miles of trails** – See the Trail Map on the following page.



**TRAILS OF THREE FALLS WOODS**



**KILNS**

**HEMLOCK BOWL**

**POND**

**PARKING**

**WATERFALLS**

- TRAILS**
- Common Off-Trail Walking Paths**
- THE ROCK DESERT**
- Major Karren Rock Areas**

**N**

Approx. 500 feet

This map is inexact; however, it is the best estimation currently available.

## UNIQUE FEATURES IN UPPER THREE FALLS WOODS—ABOVE THE GORGE

Upper Three Falls Woods is scattered with **countless sinkholes** of varying sizes, shapes, and depths. Such functioning sinkholes are important because they direct surface water to underlying conduits connecting to **crucial aquifers**. Sinkholes are intake points to elaborate underground plumbing systems – they are clear indicators of karst hydrology at work. These intake points should be left unhampered and protected from contamination to protect the many outlying wells, springs and watersheds whose water they supply. Three Falls Woods is **identified as both a water discharge area and a water recharge area**.

## MASSIVE HISTORIC STONE WALLS



Several miles of 200-year-old stone walls thread throughout Three Falls Woods and merge so seamlessly with the landscape they scarcely seem manmade. These rock walls outline the original military lots, which were given as payment to returning Revolutionary War soldiers from New York State.

In the early 1900's, bridle paths used by the nearby Troop D Cavalry of the National Guard, followed along these walls. Today they stand in silent tribute to the Herculean effort and determination of the earliest Manlius settlers.

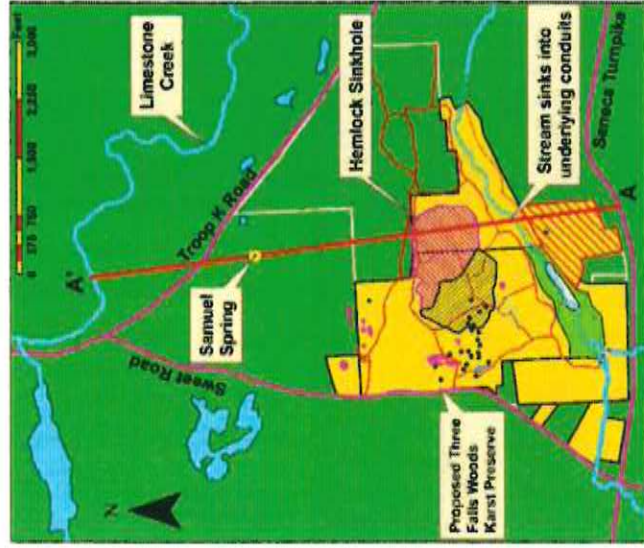
## THE ROCK DESERT—AN ICE AGE STREAMBED



These limestone pavements, often called table rock, are termed “karren” by geologists. The deep fissures and cracks in the karren rock areas of Three Falls Woods feed directly into underground water channels and several subsurface aquifers, which are essential to nearby and outlying areas.

**Noted karst hydro-geologist Paul Rubin, formerly with Howe Caverns, has conducted in-depth research of Three Falls Woods. He strongly advises that this unique land be permanently protected as a KARST NATURE PRESERVE. (See maps on pgs. 22 & 23. Abstract available upon request)**

**GEOLOGICAL CROSS-SECTION & KARST MODEL: THREE FALLS WOODS**



**Manlius limestone with Stromatopora fossils**

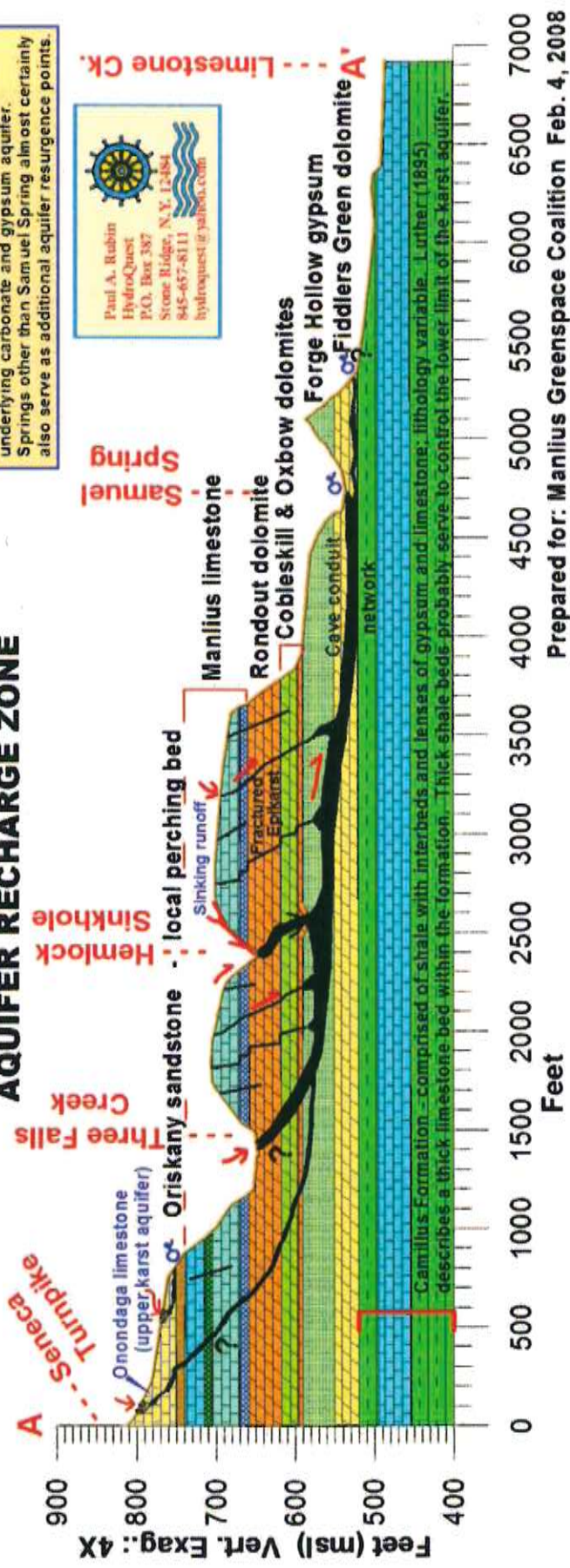


**Oriskany sandstone with phosphatic nodules**

Section Details: Profile from combination of USGS topo map and Januzi & Romans, P.C. 2007 map using HydroQuest georeferenced base. Geologic formation thicknesses from Kappesser (1976) and Hanson columnar section. Southern Onondaga basal contact based on USGS map data. Northern Camillus shale not depicted on USGS map and inferred based on Kappesser discussion of Fiddlers Green dolomite and Green Pond spring geology. Similarly, geologic dip assumed to be nearly horizontal or slightly northerly along northern section. Section preliminary pending detailed field mapping. Conduit morphology reasonably inferred by HydroQuest. In portions of the Three Falls Woods area an upper karst aquifer is perched above the major lower carbonate and gypsum aquifer. Locally, springs resurge at the top of the Oriskany sandstone - often only briefly until this water is pirated via fractures into the underlying carbonate and gypsum aquifer. Springs other than Samuel Spring almost certainly also serve as additional aquifer resurgence points.

**Cross Section Location Map**

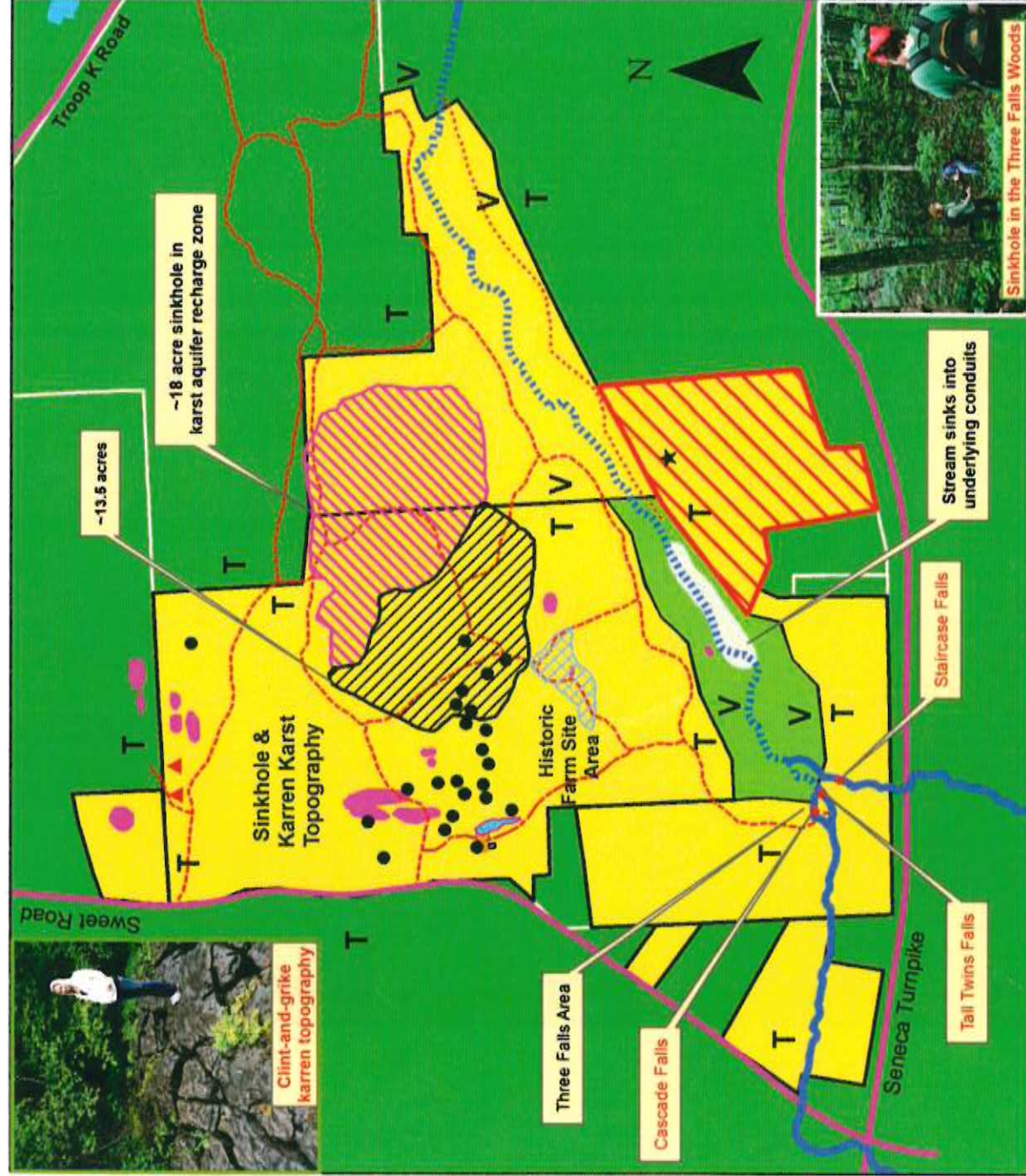
**AQUIFER RECHARGE ZONE**



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Prepared for: Manlius Greenspace Coalition Feb. 4, 2008

**KARST & CULTURAL FEATURES OF PROPOSED "THREE FALLS WOODS KARST NATURE PRESERVE"; MANLIUS, NY**



**Legend**

- Sinkholes (~ locations)
- Farm Sinkhole Pond
- Hemlock Bowl (topo based)
- Western Sinkhole Basin (topo)
- Karren Areas (examples)
- Fracture Cave
- Sinking Karst Stream
- Major Stream Sink Zone
- Farm Springs
- Streams
- Three Falls
- Ponds
- ~ Farm Pasture Area
- Kilns
- Major Roads
- ~ Trails
- Karst Preserve (potential)
- W/ile Property
- Floodplain Parcel
- Select Parcels
- Foundation

HydroQuest  
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hydroquest@yahoo.com

Note: Many of the karst features presented on this map are widespread throughout much of the Three Falls Woods area. Examples are provided to exemplify the various types of karst features present. These woods serve as an important recharge zone to down gradient groundwater receptors that have not yet been determined via standard tracer testing. The Samuel Spring is a likely receptor of potential contaminant inputs from the Three Falls Woods area. Map Datum: NAD 83, Zone 18, UTM (m). Prepared for: Manlius Greenspace Coalition. Update Revision Date: October 10, 2007

## TALL KILN

Just off a hiking trail are three **historic water-lime kilns** still intact from the Erie Canal days. Mule wagons carted the stone up dirt paths to the tops of a series of such hillside kilns. Then their chimney tops were loaded with alternating layers of wood and broken stone. A constant fire was kept burning for days, causing a chemical change in this special type of “water-lime” stone, which would subsequently enable it to harden on water contact. Next, the heated stone was pulverized, then mixed with sand and other ingredients. The resulting water-lime, as well as huge building stones cut from the cliffs here, were carted down the nearby ‘plank road’ to Fayetteville, to be used in the construction of locks and masonry all along the Erie Canal.



## Processing Natural Hydraulic Cement—Among the First in America

Kilns were dug into the sides of earthen hills to help hold the warmth of the fire. As a safety measure after a water-lime kiln went out of use, soil was mounded up against the face of the kiln and the opening partly filled in. Originally, this kiln was much taller than it now appears – the opening extended several feet below the current (raised) ground level. Note the oak lintel across the opening of this kiln.

## HISTORIC BUT VULNERABLE ARCHED KILNS

The aforementioned “Tall Kiln” and this pair of very early arched kilns in Three Falls Woods are **the last still standing**, where several hillsides of multiple kilns once stood. Over the years, all the other early kilns have collapsed. With each successive winter’s heaving and thawing, these remaining kilns become increasingly in danger of the same fate. They need immediate stabilization and repair.

New York State’s Office of Parks, Recreation and Historic Preservation (OPRHP) is willing to step in and assist with this problem, but is unable to do so until Three Falls Woods has a willing preservationist owner.

These arched kilns are an example of dry-stone laying at its best, a lost art. The fact that they are still standing despite 2 centuries of heaving, gravity, and harsh elements, is a tribute to the skills of the early settlers here.

The mouths of these kilns have been partially filled in for safety purposes, as was the Tall Kiln previously mentioned.



## OLD GROWTH TREES—SIGNS OF AGE

A twisted and 'stag-horned' hophornbeam tree, noted for its shaggy bark. Three Falls Woods harbors a mixture of old-growth, second growth, and younger trees. Pronounced nodules from broken branches are also indicators of old age - as seen on the tall maple to the left (in the photo below, left, outlined in white).

**To qualify as an old-growth tree, a specimen must be 150 years old or older.** This figure is not randomly derived - certain well-documented indicators do appear around the 150-year mark. Three Falls Woods contains groves and remarkable specimens of the following old-growth trees; maple, dogwood, hophornbeam (ironwood), cedar, hemlock, black cherry, chinkapin, hackberry, red oak, etc. Experts have estimated a few cedar trees to be well over 300 years old!

When walking through Three Falls Woods, it is important to bear in mind that **the trunks of the trees here truly belie their age.** Many old-growth trees here - the maples, and particularly the hophornbeam - have extremely slender trunks for their chronological age. One glance at the ground from which they grow provides the answer - most of these trees are literally anchored in limestone - so it is no wonder their growth has been slow or stunted. Such trees are real survivors, struggling through the cracks and crevices of unyielding bedrock.



**Trees in karst forests like Three Falls Woods are hindered by rocky barriers throughout their growth. Roots must grow through whatever cracks and crevices they can find in the massive limestone formations. Like this old-growth cedar, tree roots must twist through layers of limestone in their search for water.**

## GLACIAL ACTION + A TINY SEED

There are numerous massive **glacial erratics** strewn throughout Three Falls Woods. Glacial erratics are huge independent boulders, which have been transported and deposited distances from their origin - by ancient glacial action.

Here a glacial erratic has been split by the slow pressure of this old-growth tree, which probably took root many years ago in a fissure in the rock. It is affectionately known as **"The Tree-Sandwich Rock"!**

Three Falls Woods is full of such amazing surprises from nature - just waiting to be discovered.



## THREE FALLS WOODS IS A HAVEN FOR THE FEDERALLY-PROTECTED INDIANA BROWN BAT

The Upper Portion of Three Falls Woods contains the crucial **post-emergent habitat of the federally-protected Indiana Brown Bat**, which winters in a cave in the adjacent village of Jamesville. These rare bats deplete their stored energy reserves over the long winter. When the bats first emerge in early spring, it is essential that they find a safe roosting site with plentiful food and water within 1000 yards of their winter cave, or they may perish. **This critical site has been identified within Three Falls Woods and is a topic of ongoing concern – this area calls for a much higher level of protection.**



### Endangered Indiana Brown Bat

- Adjacent to hibernacula of genetically distinct Jamesville population (4,138)
- Extremely rare habitat on escarpment is similar to that used by the species
- Essential foraging resources for bats emerging from torpor in the spring
- Roosting habitat for male population

All bats today are under increased environmental stress due to manmade changes, coupled with the added threat of the pervasive lethal disease known as 'white-nose syndrome'. Stress to the animal can exacerbate the spread of this deadly disease – all the more reason officially identified places of refuge, such as Three Falls Woods, must be preserved intact.



## THE VERNAL POND

Not far from the Sweet Road side of Three Falls Woods is a natural vernal pond and several nearby freshwater springs. Vernal ponds are valuable ecosystem components, essential for maintaining fragile amphibians that are rapidly disappearing due to manmade contaminants, overbuilding, and climate changes. Vernal ponds typically occur in forested basin depressions, as here in Three Falls Woods. They are mostly fishless, and remain inundated for at least two months in the spring and early summer.

Vernal ponds are frequently discounted and destroyed because of lack of knowledge of their crucial environmental importance. **Vernal ponds are vital to the amphibian population** – they serve as the only breeding sites for salamanders and wood frogs. Though these amphibians move elsewhere to live the rest of the year, they will vanish from the landscape without vernal ponds in which to breed and lay eggs.

Some vernal pond-dependent species are: the spotted salamander, Jefferson's salamander, blue-spotted salamander, marbled salamander, wood frog and one invertebrate (fairy shrimp). Numerous other wildlife species breed and/or feed in vernal ponds (e.g., spring peeper, gray tree frog, spotted turtle, etc.).

Amphibians can travel as far as 200 meters from their terrestrial non-breeding habitat before arriving at their ancestral vernal breeding pond. Manmade barriers (e.g., roads, houses, lawns) may impede this migration. Preservation of a large terrestrial buffer adjacent to a vernal pond is critical to maintaining a breeding amphibian population. Vernal ponds sometimes are difficult or impossible to identify during their "dry" phase. This vernal pond within Three Falls Woods requires further study and greater protection.





## MAIDENHAIR SPLEENWORT—A TINY TREASURE *Asplenium Platyneuron*

Tucked in hidden crevices, often found in families, ebony spleenwort nestles in cool moist limestone ledges, from which it seems to twinkle like little green stars. Maidenhair spleenwort is just one of the state-protected species found in Three Falls Woods.



The pileated woodpecker and pickerel frog, are just two examples of the abundance of animals that depend on Three Falls Woods for their daily existence. Our wildlife inventory continues to grow.

## OUR HOPES FOR THREE FALLS WOODS

- After hearing the expert opinions scientists, professors, and environmentalist, who have come to visit Three Falls Woods, and after hearing the hikers, neighbors, local citizens, and outside visitors, it is clear what should be done about this area. **Everyone who has seen the place (except for developers) believes that Three Falls Woods should be permanently preserved in its entirety.** Most would like to see this done by whatever trust or agency has Three Falls Woods' best interests at heart, as well as the means to manage it on an ongoing basis.
- **Manlius Greenspace Coalition, as a registered 501c3 nonprofit corporation, is prepared to become an independent conservation land trust for this purpose.** MGC has a plan for the executive administration and everyday stewardship of the area, and would welcome the support and guidance of an environmental agency.
- As soon as preservation and permanent protection are in place for Three Falls Woods, **a program of conservation management** is a priority, including plans for managing invasive species. Fortunately, the prototype for such a program for Three Falls Woods already exists. It was meticulously drawn up as an entire semester's research project, by a dedicated class at **SUNY's School of Environmental Science and Forestry.** (Copies available upon request)
- Studies of Three Falls Woods suggest that it **offers tremendous opportunities for on-site education.** This unique area is a natural classroom, a living laboratory of earth science, ecology, biology, geology, karst hydrology, and local history. Three Falls Woods is the perfect learning setting for any student of nature, and more studies are needed: expanded inventories of plants and animals, geological and hydrological studies, historical research, etc. The ideal would be to create a self-contained library of Three Falls Woods Research, and work to make this happen has already begun!
- Not only does Three Falls Woods still have much to teach us, this unique area has long offered wonderful opportunities for **outdoor recreation**—hiking, snowshoeing, bird watching, nature photography, a jog with the dog, a stroll with a friend. By protecting these lands, we are also **preserving an important link between the community and an amazing natural resource.**





## THE GRASSROOTS GROUP BEHIND IT ALL— MANLIUS GREENSPACE COALITION

### How it Started

In 2004, a group of concerned citizens began working together to insure that Three Falls Woods receives the necessary research, recognition and protection it deserves. In 2005, the group became a registered I.R.C. Section 501(C)(3) not-for-profit organization – **The Manlius Greenspace Coalition (MGC)**. Since then, the organization has worked tirelessly with the Town and Village of Manlius, neighboring towns, and NY State to promote policies with an environmental conscience and to preserve and protect our local natural resources, fresh waters and open spaces.

### The Bigger Picture

Manlius Greenspace Coalition was instrumental as the first mover organization promoting the concept of the **Onondaga Escarpment Nature Corridor**, inspired by Clark Wallace, then with Trust for Public Lands.

### Gaining Recognition for Three Falls Woods

MGC has been proactive in raising community environmental consciousness, initiating and promoting numerous Town open space regulations, as well as **two local Critical Environmental Area designations**. We have helped raise municipal and public interest on issues such as the hidden hazards of building on extreme karst terrain, the importance of aquifer protection, the need for comprehensive plans, the importance of stormwater management, the dangers of unregulated clear-cutting, and the controversial issue of hydrofracking.

### Preservation & Protection First

**Research has proven, and common sense dictates, that the best use and highest good for this remarkable area, would be its permanent protection—as “THREE FALLS WOODS KARST NATURE PRESERVE.”**

### Priorities—Education & Continued Research

Long ago, Manlius Greenspace Coalition recognized that Three Falls Woods offers the ideal opportunity for students of all ages and backgrounds to temporarily put aside secondary learning mechanisms and go to the source itself. Visitors to Three Falls Woods are immediately intrigued with tangible lessons in earth science, geology, biology, hydrology and local history. They can give back by joining in on our ongoing study and research projects – to know Three Falls Woods even better.

## THREE FALLS WOODS—NO PLACE MORE DESERVING OF PRESERVATION

### IN CONCLUSION

#### A Rare But Still Unprotected Landscape

As mentioned earlier, Three Falls Woods shares many of the same fascinating geologic features as its neighboring sister, Clark Reservation – with the added phenomenon of three side-by-side waterfalls! Two glaring differences – **Clark Reservation is well known and well-protected, while Three Falls Woods is little-known and unprotected** – as scenic as it is vulnerable.

### The Dilemma

Municipal officials of both Village and Town are unequivocal in their approval of Manlius Greenspace Coalition’s formation of a Conservation Land Trust seeking to preserve Three Falls Woods as a public nature preserve. Both Village and Town value the area as a highly scenic and desirable recreational resource - and they are likewise intent on its preservation for more urgent reasons. Both Town and Village have floodplains with nearby residents/businesses directly impacted by Three Falls Woods’ vulnerable underground hydrology.

Sadly, neither municipality currently has funds to help purchase these lands, but both offer their wholehearted assistance in other ways. Each municipality has promised to assist MGC with various fundraising venues and opportunities, and the Village has pledged its legal firm’s special grant-writing group to assist in obtaining suitable grants for the project. Both the Town and the Village approve of Manlius Greenspace Coalition’s goal of permanent preservation of Three Falls Woods and pledge to assist us as we move forward with this worthy project. Both the Town and the Village of Manlius encourage Manlius Greenspace Coalition to work with an appropriate larger Land Trust in the crucial acquisition process.

**Three Falls Woods also carries the fascinating story of a community’s discovery of a hidden natural treasure in its midst – and that community’s dauntless determination to preserve this wonder for countless others now – and for generations to come.**



**THE MUSHROOM ROCK**  
The glacial erratics in Three Falls Woods are so distinctive, many have their own names.

### FOR MORE INFORMATION,

research reports, additional expert opinions, etc., please contact:

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An outstanding article on Three Falls Woods by Phil Bonn was featured in the spring 2008 issue of the magazine *Life in the Finger Lakes*. To view this article, go to [philbosphotos.com/ThreeFalls.html](http://philbosphotos.com/ThreeFalls.html).

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An Overview of

# **THREE FALLS WOODS**

Highlights of the  
many features  
of remarkable  
Three Falls Woods