



Urban Forest NEWS



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The picture to the left shows an alley of Bradford Pears. About 30 years ago, this was the “tree of choice” for many developers. The Bradford grew quickly, had a lovely form (until it broke), needed little pruning at first, was inexpensive and had lovely spring blooms. What more could you want, right?

Unfortunately, these trees have a high tendency to break off large branches due to their quick growth habit and weak wood. When they started aging out, they all did so at once. And, they became extremely invasive! Not good.

SUNKEN RD RESTORATION PROJECT



An area along Sunken Road had to be disturbed this summer to allow for installation of a new sewer line. The area has been replanted with a diverse palette of trees and shrubs to function as a bird habitat.

A bluebird box will be installed this winter to be ready to welcome new residents in the spring.

The area project was directed by Tree Fredericksburg and the City of Fredericksburg. UMW students and staff assisted with the planting. 

WHY DIVERSITY?

DIANE BEYER

What is diversity and why is it important with urban forests?

Diversity is, basically, a variety of life at all levels of organization. There are different kinds of diversity: species, genetic, population and community.

Species diversity is mainly what we will discuss here.

Increasing the species density of our urban forest is an important component to building resilience to climate change and to reducing risks from pests and/or pathogen damage.

The City Street tree list takes into account the different microclimates we have in and around the City and the list is populated with trees with diverse functions and abilities. Some trees will grow tall and narrow to fit into that sort of space. Some trees tolerate hard clay or construction type soils. Some tolerate drought. Others are good habitat for birds and other wildlife.

Many of the trees on the list are natives, but because we are planting urban trees in super urban situations where they will

encounter high heat, salt from snow plows, compaction of root soils, etc. we also must have some non-natives available because many natives just will not tolerate those harsh conditions.

A lack of diversity, a monoculture, is not desirable for other reasons as well.

In the 1940s-50s, many communities planted American Elms along streets and boulevards. The elms, when mature, were a striking entrance to the quintessential American neighborhood.

Unfortunately, a silent killing disease arrived in Ohio on a shipment of logs from France where it had decimated elm populations. The killer was Dutch elm disease. The fungus killed 77 MILLION US trees by 1970!

One of the reasons for such total annihilation of this species was because of the monocultures planted along
(cont on pg 3)





NATURAL & HISTORICAL RESOURCES OVERLAP AT SMITH RUN

ERIK NELSON

A wooded pocket of land exists on the south side of Cowan Boulevard, along a creek called Smith Run. Tall oaks and beech trees tower over the landscape, creating a peaceful setting within a rapidly developing community. That shaded place, however, was once a noisy, smoke-filled battlefield.

In 2001, the City of Fredericksburg partnered with a local battlefield preservation group and the Virginia Department of Conservation and Recreation to acquire an 11-acre parcel of battlefield terrain. The fighting there occurred on May 4, 1863, the day after a battle at Salem Church, which was part of the Chancellorsville campaign. The overall battlefield is extensive, but development had consumed much of it, so this one parcel is representative rather than comprehensive.

The 11 preserved acres is located within a substantial natural area that was already protected through various zoning decisions. When several apartment complexes along Cowan Boulevard were built, for instance, the various developers set aside a total of 15 acres along the creek as dedicated open space. In addition, when the City constructed its new Police Station on Cowan Boulevard, it set aside a 4.5 acre parcel of natural area. The total protected land amounts to 30.5 acres, all of it now in mature trees.

There is an additional 6 acres on the west side of Smith Run that is historically significant and which would give the City a total of 17 acres for a future Smith Run battlefield park. But, how significant is this terrain really?

Late on May 4, 1863, Federal troops of the Union Sixth Corps awaited a Confederate assault on those hills about one mile west of the town. If the gray-clad troops could break the Federal line, they would be in a position to devastate the outnumbered Yankee force before it could escape across the Rappahannock River. If the Union troops could hold, they would gain time to withdraw out of harm's way under cover of darkness.

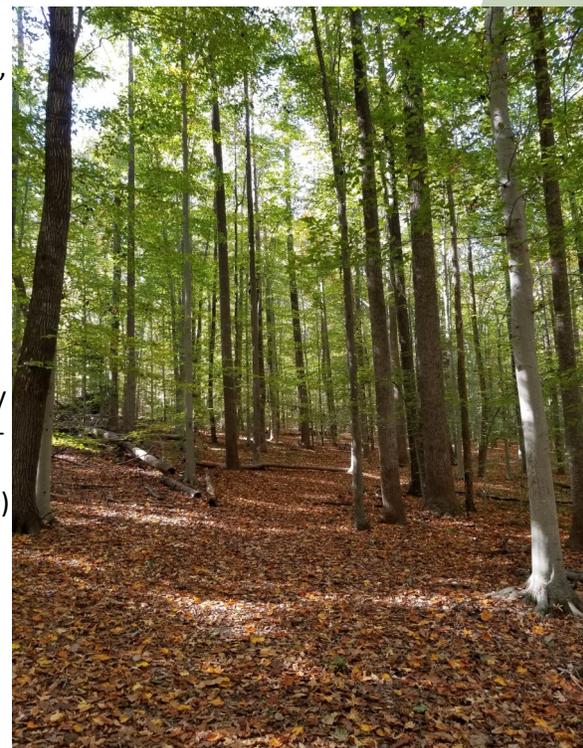
The Union army occupied two strongholds that day. After three days of heavy fighting, Major General Joseph Hooker, with 80,000 men, held an entrenched position just north of Chancellorsville. Following the second battle of Fredericksburg and a battle at Salem Church, the Union Sixth Corps, 19,000 men strong, held the open plateau west of Fredericksburg. Confederate General Robert E. Lee detached forces from Chancellorsville to concentrate against and try to destroy the isolated Union force.

Late that afternoon, a Confederate battery fired three shots in rapid succession and the Southern infantry surged forward. A Union veteran recalled that, "the rebel yell broke from the woods far in front, and the whole hillside was alive with men." A Louisiana brigade poured across the open ground that is now the Oak Hill Cemetery and crossed Plank Road where it cuts through the hilltop. They were joined by a North Carolina brigade coming up the hill on their right. They punched through a New York regiment on the ground that is now Hugh Mercer School and pressed on into the Smith Run valley.

A Vermont brigade held the line on the west side of Smith Run (where the City-owned land is located). The Southerners advanced with the sun in their eyes, unaware they were moving into the teeth of a Federal force. When they came in close, the Northerners poured volleys of musketry into the Confederate ranks and then counterattacked. The surprised Southerners reeled in defeat, but another Southern force advancing up Fall Hill Road (modern Avenue) outflanked that Federal line and the Vermont men disengaged and fell back.

The Union Sixth Corps re-crossed the Rappahannock River that night.

At Smith Run, over 2,000 men had become casualties. One hundred and fifty-six years later, that blood-soaked ground is now a quiet, wooded place, soon to become a City park. 🌳





WHY DIVERSITY? (CONT FROM PG 1)

community streets. This fungus, it was discovered, can spread underground from the roots of one tree to the roots of the next. Trees growing as closely as the elms lining America’s streets had root systems that had virtually grafted together, allowing their quick destruction.



This is the last cathedral arched boulevard of American elms in the country, located in Westmont, PA. It is intensively managed to keep the trees as protected as possible from Dutch Elm disease.

Had a diversity of trees been planted, streets would have maintained some green canopy.

When you get out of the City, the benefits of diversity increase. All the trees in a forest cannot be the “tall ones”, so tree species need to fill in to serve the role of understory trees. This inherent diversity in wildlife habitat also provides soil microbial activity benefits.

Just like a compost pile requires different type materials to “work”, leaf litter in a forest needs diversity to create rich, deep soils. The chemicals and different make-ups of various tree leaves creates a more active microbial community and healthier soils.

Tree diversity is also visually pleasing. It provides an abundance of textures, forms and colors. Trees perform differently at different times of the year, and diversity allows for the species to provide interest all year. ♻️

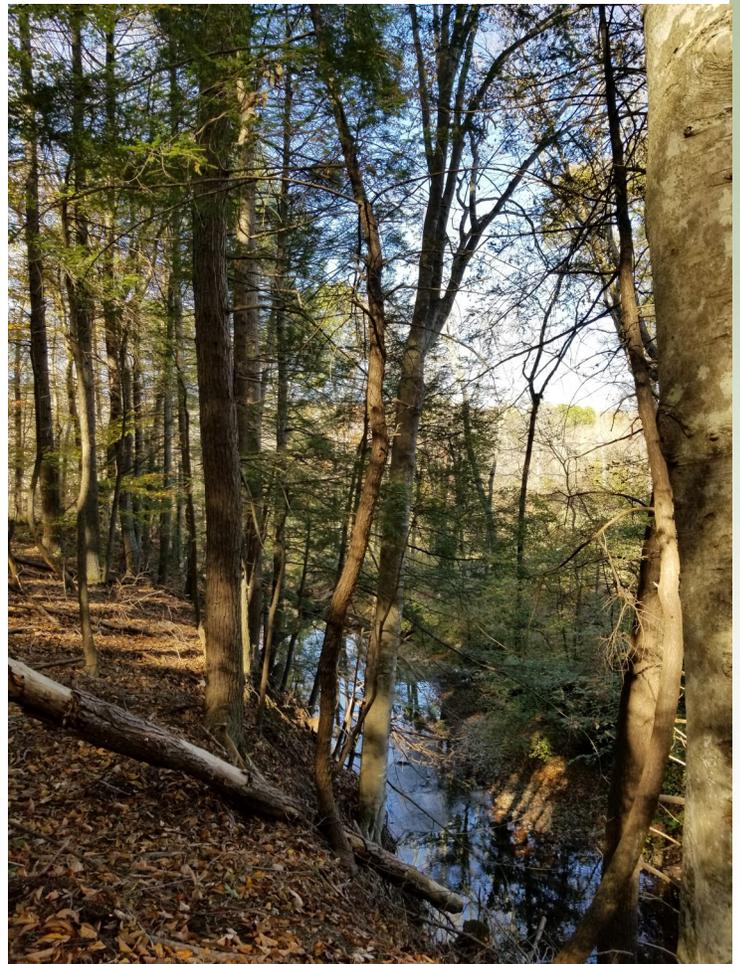
2019 HERITAGE TREE WINNER

DIANE BEYER

The 2019 Heritage Tree program winner has been chosen! This year a special collection of trees is being chosen for its notability. The collection is located on the City’s watershed acreage and is unique to the area.

A group of healthy Eastern Hemlocks (*Tsuga canadensis*) has been chosen in the “collection” category. A second “winner” is in the same community, but a spectacular specimen hemlock. We have fondly named her “Sophia”. The southernmost zone for hemlocks is Zone 7, and with climate change, this part of Virginia is quickly transitioning to what has been designated 7B, which is nearing Zone 8. Hemlocks require shade by hardwoods to regenerate, and this community is encompassed within the shade of beech, maple, and oaks. They also require fairly moist soils, and this community enjoys the perfect conditions due to its

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Sophia

TREE PROFILE

EASTERN HEMLOCK.

(*Tsuga canadensis*)

HT: 40-70 ft.

W: 25-35 ft.

LEAVES: 5/16 to 9/16 inch flat needles. Green above with 2 distinct white lines on underside. Flattened rather than spiral appearance on branch.

FLOWERS: Produced in spring.

FRUIT: Small cones that ripen in fall and release seeds in winter.

ORIGIN: North America. Zones 3-7.



Hemlocks are often found in shady, riparian areas, and are stellar in holding streambanks in place. Their branches shade the waters of the streams they cling to, creating a cooler and more oxygenated environment for aquatic life. The dense year round foliage of hemlocks intercepts rainfall, thus preventing nutrient and sediment runoff. These trees transpire more slowly than hardwoods, allowing them to provide water to neighboring trees during dry spells. In addition, they also draw up excess water, which is helpful during flooding events.



2019 HERITAGE TREE WINNER (cont)

proximity to Deep Run.

Unfortunately, many of our native hemlocks are being attacked by a pest called the hemlock wooly adelgid. Adelgids are small, soft bodied aphids that suck on hemlock foliage and can cause death.

Fortunately, the adelgid is treatable and this stand of special trees will be treated in the spring as a precaution. No sign of the pest has yet been seen in this area.

Hemlock groves create micro-environments that are important for forest diversity and can live for hundreds of years. 🌲

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