

Landscape Culture

a newsletter for cultural landscape stewards

Cultural Landscapes Program

Spring 2018

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Witness Tree Project: Hampton National Historic Site and Rhode Island School of Design

It has been ten years since the Rhode Island School of Design (RISD) began exploring ways to use wood from Witness Trees that had reached the end of their lifespan as a teaching tool. The project, which began at [Hampton National Historic Site](#) (NHS) in Maryland, came to be known as the [Witness Tree Project](#).

The project immerses RISD students in a site's history and culture through the perspective of a Witness Tree, which is a tree known to be present during a notable event in history. They express their understanding of the layered history of the site by creating an artistic object or piece of furniture that incorporates the historic wood. For example, one student created a bench that was inscribed with text from a local runaway slave announcement, crafted from the wood of a fallen Hampton pecan tree.

According to Daniel Cavicchi, RISD Associate Provost and Cultural Historian, "Witness trees have stood for a century or more, while around them battles have

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About Us

Learn more about [cultural landscapes in the National Park System](#).

Learn more about the [organizational management of NPS cultural landscapes](#).

For current news about NPS cultural landscapes, join us on social media:



A declining witness tree is removed ([witnessstreeproject.org](#)).

been waged, presidents have lived and died, and whole industries have peaked and declined. Now each of these trees serves as an axis from which students can expand the scope of their thinking outward, from specific events to more complex questions about time and place, nature and culture.”

Since its conception, the project has connected design students to Witness Trees in seven national historical parks and national historic sites. RSID is planning to return to the Hampton NHS in 2019, where they will work with Brooke Derr, Horticulturist. Brooke is in the process of removing several declining trees that were planted in the early 1800s and is hoping to have the wood “live on” in the students’ artwork. Planning for the project is underway, and the park will begin the process of cutting and drying the wood this summer. After the class, the students’ products may be selected for display at the site.



Student artwork from Thomas Edison National Historical Park Project (witnessreeproject.org).

Tree Planting at Gateway Arch National Park: A Team Effort

The Memorial Landscape

The Gateway Arch was conceived as a visual and symbolic statement rising from a forested, park-like setting. The monumental arch and surrounding grounds, overlooking the Mississippi River in St. Louis, Missouri, were the vision of architect Eero Saarinen and landscape architect Dan Kiley. The two men were part of a collaborative team that submitted the winning design for the memorial’s architectural competition of 1947-48.

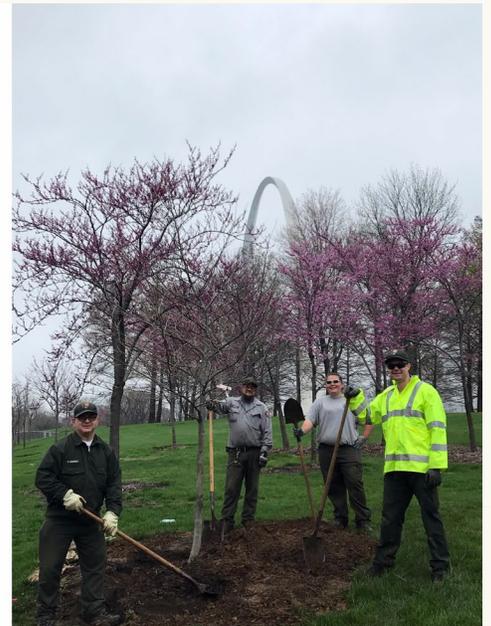
Kiley designed tree-lined walkways to create an

organized, enclosed space that contrasted with the open space surrounding the Gateway Arch. Single-species allées grew to a uniform height, creating the appearance of a dense canopy from underneath and an undulating line from a distance.

The Project

By 2009, some trees were in poor condition due to their age, and missing ash trees had not been replaced over concerns about their susceptibility to the emerald ash borer. As part of a **\$380 million renovation** (including

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JEFF and visiting park staff install a tree staple, move trees to planting site, and complete tree planting.

\$221 million of private funding), the museum and landscape were redesigned and will be officially opened July 3rd. The new landscape sought to preserve Kiley's circulation and planting patterns. Over 800 London Planetree 'Bloodgood', an Anthracnose-resistant variety, were planted in formal allées, echoing the geometry and uniformity of Kiley's design. However, many of the trees planted by contractors did not survive.

The park's Grounds Supervisor Michelle Royer needed to replace the trees. She sought an innovative solution involving park staff from several parks, whom she felt would be able to finish the replanting at lower cost and with greater attention to detail. In late April of 2018, Michelle brought together seven arborists from various parks to assist [Gateway Arch National Park](#) in a planting project.

The group planted 65 London plane trees in the allée that borders the walkways. Each tree was stapled to anchor them into the tree pits, avoiding the bulkiness of conventional tree staking. After they replanted the trees, they reinstalled the pavers that line the edges, mulched, and reinstalled the drip irrigation tubing around each of the trees in the tree pits. The group also completed several other major landscape tasks that were needed during their time at the park.

The project was successful on many levels: supporting training needs, addressing budget shortfalls, and

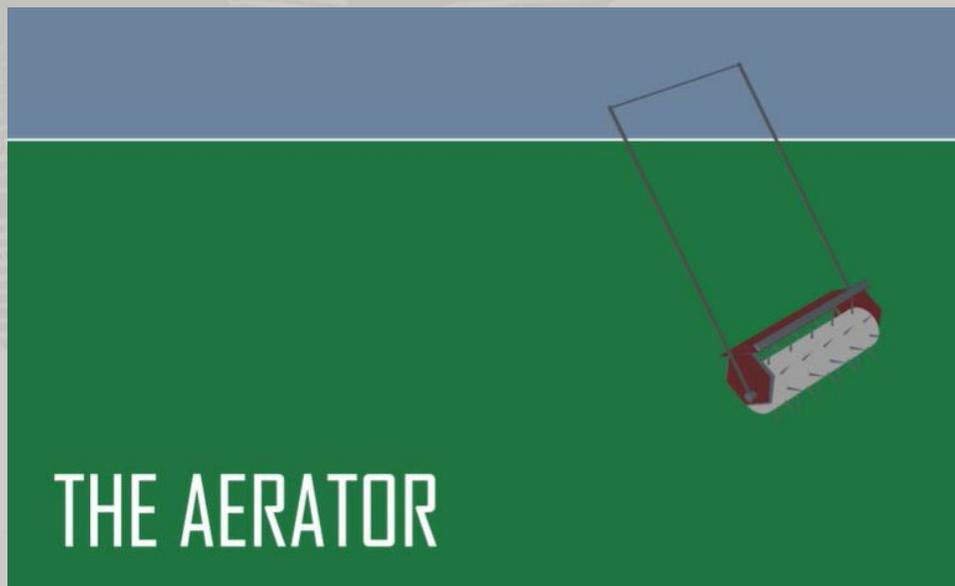
completing skilled plant installation. In addition to work accomplished, several members of NPS staff learned new skills: operating a mini excavator, grading and laying sod, and [using tree staples](#).

As Michelle said, "We have a lot to learn from one another, and project assistance from staff in other parks is a great opportunity to fulfill several goals."



JEFF staff and visiting staff from six parks stand with newly planted tree, Gateway Arch in the background.

Tool of the Moment: Aerator



Follow [this link](#) to view a short illustration of aerator assembly.

Benefits: Reduces soil compaction, increases water infiltration, enhances turf root systems, reduces thatch.

Types: Stand alone push units, attachments for riding lawn mowers and tractors. Core/plug aerators provide a greater benefit than solid core aerators.

Uses: Use aerators on moist, but not overly wet soil, in the spring and/or fall. For increased impact double aerate in a crisscross pattern. After aerating, mow the lawn to break up soil cores, and follow with over-seeding.

Employee Spotlight



Name: Lonnie Maize
Job Title: Preservationist

Years with NPS?

I'm in my 19th year.

Maintenance task you enjoy most?

I enjoy any maintenance task where I get to be involved with taking a neglected tree, trail, structure, or landscape and giving it new life so the American public can enjoy it for many more years.

Most inspiring project?

Satisfying is a better word for me. I felt great satisfaction by being able to start and finish a rock cellar on the Cultural Landscape at Peter Strauss Ranch in Santa Monica Mountains Recreation Area. It required dismantling a portion of wall and roof that had separated from the rest of the structure.

The project required me to establish a method to be able to reset the stones in the same place and in original orientation. I used Plexiglas sheets to make a "map" of the location of the stones before I disassembled the wall. It also involved reinforcement and recreating the curved roof complete with waterproofing.

The satisfaction of being involved from start to finish and seeing the transformation is what keeps me enjoying being a Preservationist for the National Park Service.

What is important to you about the Cultural Landscapes of your park?

I find I am part of the thread that helps Americans still be tied to the past. So much is lost if we lose touch with our human history. In my job I have a responsibility to maintain a connection from the earliest American inhabitants, to preserve America's military history, and to make the recent human history relevant of those who lived on the land.

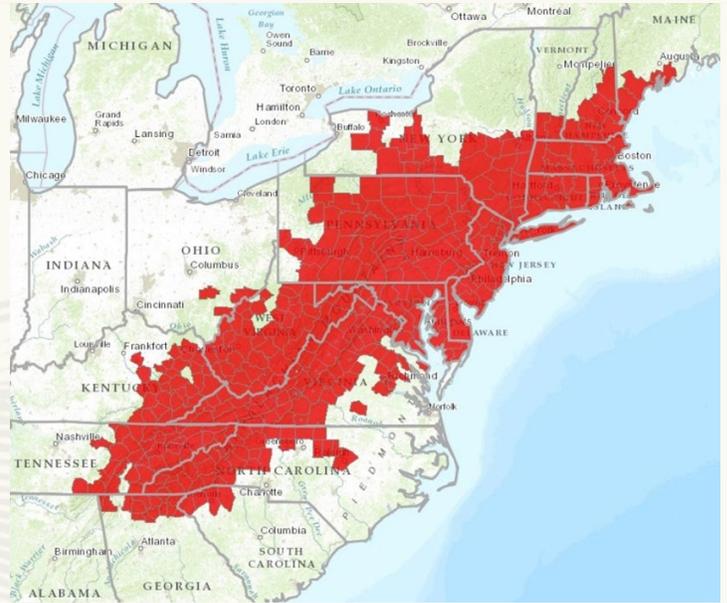


Lonnie and Plexiglas map of stone layout.

Pests and Diseases: Hemlock Wooly Adelgid, Lethal Pest of Eastern and Carolina Hemlocks

The tallest trees in many eastern US cultural landscapes are Eastern Hemlock (*Tsuga canadensis*) or Carolina Hemlock (*T. caroliniana*), reaching 120 to 150 feet tall. These trees frame historic views, define landscape spaces, and cast welcome shade upon designed and vernacular landscapes. Since the 1950s, a non-native, aphid-like insect called Hemlock Wooly Adelgid (pronounced uh-DEL-jid), has infested 90% of the geographic range of these hemlocks, causing death to millions of trees. While the threat runs unabated, researchers are exploring a biological control mechanism borrowed from the Pacific Northwest US and Japan.

Hemlock Wooly Adelgid or HWA is native to both East Asia and curiously, the Pacific Northwest. This tiny insect protects itself with a white, waxy “wool” and has



Wooly Adelgid infestation affects 90% of the native range of Eastern and Carolina Hemlocks.



Eastern Hemlock killed by Hemlock Wooly Adelgid.



The white, woolly covering of Hemlock Wooly Adelgid is visible at the base of the underside of needles.

been present in the Pacific Northwest for thousands of years. HWA feeds on the Western Hemlock (*Tsuga heterophylla*) just like its eastern cousins, by sucking sap from the base of the underside of needles. But while the Eastern and Carolina Hemlocks die from this predation, Western Hemlocks show little damage. Researchers believe that Western Hemlocks are resistant due to the longevity of their relationship with HWA, and pest populations are kept in check by native, predatory beetles.

The eastern US population of HWA was accidentally introduced into Richmond, Virginia, from Japan in 1951. The pest is now found from northern Georgia to coastal Maine and southwestern Nova Scotia. HWA nymphs and adults insert their straw-like mouthparts, known as stylets into the base of hemlock needles where they feed on sugars stored in the foliage. Each insect is less than 1/16” in length, but their cotton-swab-like masses grow to 1/8”. Look for them on the undersides of hemlock needles from October through May, when they secrete the woolly covering. Infected needles and stems turn brown and drop, leading to defoliation and eventual death of the tree. Infected trees may live for up to 15 years before succumbing to the pest.

Researchers are concerned about the relationship between changing climatic conditions and the rapid spread of HWA in the eastern US. Stresses to hemlocks

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The historic Rapidan Camp Eastern Hemlock forest decimated by Hemlock Woolly Adelgid is being colonized by hardwood trees.

from severe heat and drought may be hastening the mortality of infected trees. Researchers are trying to reduce HWA populations with *Laricobius nigrinus* beetle from the Pacific Northwest and its relative from Japan, the *L. osakensis* beetle. Since 1995, there have been 1,758 releases in 1,027 locations across the HWA-infested region. While these beetles are the primary predators of HWA and consume large numbers of larvae and nymphs each year, their populations decline in cold winters, and are challenging to sustain.

In one HWA-affected cultural landscape, Rapidan Camp at [Shenandoah National Park](#), NPS staff collaborated with the Olmsted Center for Landscape Preservation and the University of Tennessee Department of Forestry, Wildlife and Fisheries to develop a Cultural Landscape Report with a forest management strategy. Rapidan Camp is the site of President Herbert Hoover's summer retreat from 1929 to 1933. The camp was nestled in a grove of Eastern

Hemlock between two mountain streams. Death of hemlock due to HWA infestation had transformed the landscape character from a shady retreat into eroded clearings, meadows, and young stands of pioneering hardwood trees.

The [Rapidan Camp Cultural Landscape Report](#) treatment plan proposed a combination of strategies to deal with HWA infestation, including allowing a successional stand of Tulip Poplar to replace the Eastern Hemlock, while treating the small, young, infected hemlocks with the insecticide Imidacloprid, to provide a seed source for the future. Hemlocks are late successional species that need the over-story shade of other species to establish. At Rapidan Camp, it is hoped the Tulip Poplar canopy will one day nurse a new stand of Eastern Hemlock, restoring the historic character of the cultural landscape.

Fundamentals of Accessible Trail Construction: Installing a Stabilized Surface Trail

Accessible paths and trails in cultural landscapes vary in character from a “natural” appearance, achieved with soil stabilizer products, to traditional solutions, like chip-sealed asphalt. Regardless of the surfacing method, a hallmark of a successful high-use trail is a properly-compacted sub-base. In general, a 2”- 3” surfacing course on top of at least 4” of excavated and compacted aggregate will help reduce the need for repairs and prolong the life of the trail.

In March, [Minute Man National Historic Park](#) hosted a training on Accessible Unpaved Trails and Boardwalks. A test patch for a new trail was built using a soil stabilizer product that demonstrated the fundamentals of trail construction. Watch [this slideshow](#) to see how the site’s base was prepared and the new surface was installed.



Follow [this link](#) to view a powerpoint presentation, *Steps to Installing a Stabilized Surface Trail*.

Upcoming Training Opportunities

Park Cultural Landscapes Program & Olmsted Center for Landscape Preservation

[Turf Care Workshop](#)

August 28-30
Golden Gate NRA, CA

[Preservation Horticulture Workshop](#)

September 11-13
Grand Canyon National Park, AZ,

Cultural Resources Academy

[In Effigy Series](#)

First video released May 7th.
Video series critically chronicling incidents that occurred at Effigy Mounds National Monument.

Vanishing Treasures

[Guiding Principles for Field-Based Historic Preservation](#)

June 19-21
Grand Teton National Park, WY

[Earthen Materials and Adobe Preservation and Repair](#)

June 11-12
Pecos National Historical Park, NM

[Wood and Log Preservation and Repair](#)

July 16-20, 2018
Grand Teton National Park, WY

[Moisture Management in Historic Buildings](#)

August 27-28
Grand Teton National Park, WY

Bureau of Land Management

[Resource Advisor Course \(READ\)](#)

June 6-7, 2018
Cedar City, UT

National Preservation Institute

[Historic Windows: Managing for Preservation, Maintenance, and Energy Conservation](#)

Aug. 27-28
Portland, OR,

[Historic Bridges: Management, Regulations, and Rehabilitation](#)

Sept. 12-13
Denver, CO

National Center for Preservation Technology and Training

[3D Photogrammetry Workshop](#)

July 9-13
Nantucket, MA

[3D Laser Scanning Workshop](#)

July 16-20
Nantucket, MA