Landscape Culture

a newsletter for cultural landscape stewards

Cultural Landscapes Program Winter 2018

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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:

De-topping Trees: Mitigating the Effects of Inappropriate Pruning

What is tree topping?

Tree topping is a drastic pruning practice used to reduce the height of trees, often to improve views. It involves making heading cuts, often to internodes (rather than correctly at nodes). While some heavy-handed pruning styles can be appropriate if practiced historically, such as pollarding, pleaching, and espalier, tree topping is never an appropriate pruning technique.

What are the results of tree topping?

Tree topping negatively affects tree health and aesthetics. The large heading cuts created during topping reduce the photosynthetic capacity of the tree, creating a stress response. In many tree species, the tree reacts by producing a large number of water sprouts at or below the heading cut. These sprouts create the aesthetically unpleasing "hydra effect" at each remaining stub (photo below).

Worse than the aesthetic result, the loss of branches and large wounds can lead to sun damage, nutrient stress, insect infestation, and decay; ultimately

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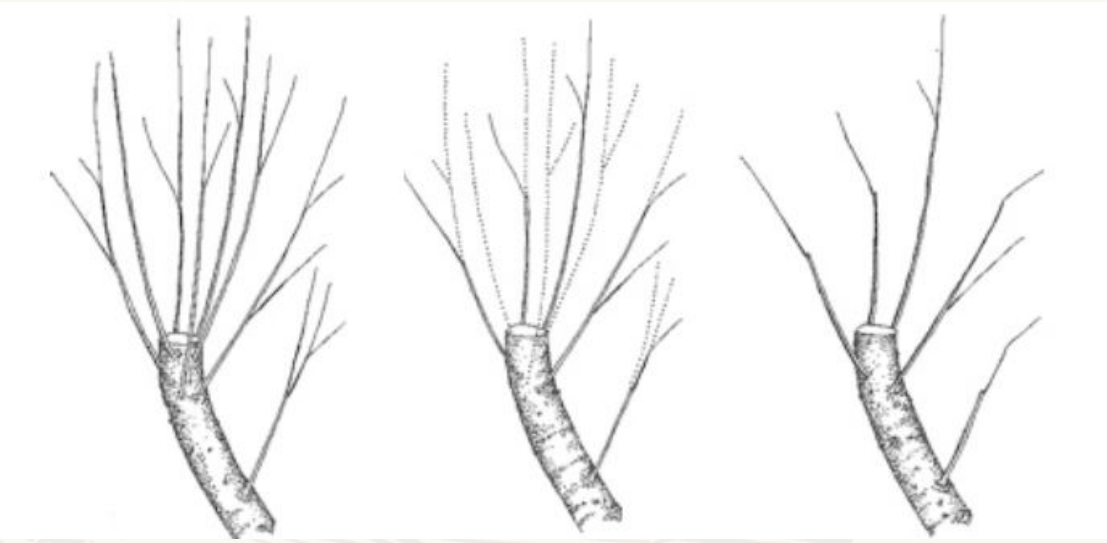
Topped apricot tree exhibiting stress response of numerous water sprout growth. (NPS Photo)



Select new leader, remove crowded and crossing water sprouts, and reduce remaining sprouts to lateral branch. (With permission from Urban Tree Foundation, http://www.urbantree.org/)

reducing the life span of the tree. Rapid water sprout growth, often from an internode, can result in weak attachments. Added to this, the sprouts are often growing in a decaying stub that resulted from the large tree wound. The combination of weak attachments and decay creates hazard trees.

Steps to de-top a tree.

Follow these steps to restore the health and aesthetics of a tree that has been topped or suffered from breakage due to ice and wind storms.

1. Do not cause additional stress to the tree. Restoration pruning should be delayed until the tree's remaining branches can provide substantial food to the tree. Even then, corrective pruning should be limited and occur over the course of several years.
2. Evaluate the water sprouts at each affected branch stub and hydra. Remove the smallest sprouts with the weakest connection (no more than 25% per year) and leave the larger sprouts. Late summer is the ideal time to remove water sprouts in order to reduce the number of new sprouts.
3. Choose a large sprout with the best alignment and attachment to become the main scaffold branch. Reduce the most vigorous remaining water sprouts to a strong lateral branch (see drawing).
4. Finally, remove any branch stub that remains beyond the retained water sprout to avoid decay.

Continue to educate yourself and coworkers about best pruning practices so you can avoid this process in the future.

What's New

Preservation Horticulture videos

Turf Management

This two part series on managing turfgrass, narrated by Charlie Pepper, former Director of the Historic Landscape Preservation Maintenance and Education Program at the Olmsted Center for Landscape Preservation, will define cultural landscapes and the history of turfgrass (part 1) and consider how research, analysis, and planning can help guide turfgrass management (part 2).

Grafting

This short video led by Keith Park, National Park Service horticulturalist and arborist, demonstrates how to safely perform a whip and tongue graft.

Cultural Landscape documents portal

All of your favorite cultural landscape documents are now accessible from a single place! A new References page contains links to each of IRMA's cultural landscape document collections (CLIs, CLRs, Management Plans, and more) as well as downloadable reference materials and preservation guidance documents.

Employee Spotlight

Name: Joe Rocha

Job Title: Laborer Leader (Pathways)

Years with NPS? I've been a NPS employee for about 5 years, and have been working with the Olmsted Center for almost 8 years.

Favorite/most inspiring project?

The project that inspired me most was Orchard Pruning at Hopewell Furnace National Historic Site. My favorite project that I have participated on was hazard pruning and installation of lightning protection systems at Fredericksburg & Spotsylvania National Military Park.

What inspired your interest in cultural landscape preservation?

There's a historic Yellowwood tree in the formal garden at Adams National Historical Park, planted by John Adams. It has a prop holding up a large scaffold limb, and in the trunk cavity there is cement, metal, and foam. This tree has lived through years of bad preservation practices, but it just keeps on kicking and throwing out flowers. I want to help those pieces of landscapes be around for years to come.

Comprehensive Condition Assessments in Cultural Landscapes: New WASO project provides no-cost assistance to parks

Select NPS units will receive Cultural Landscape Comprehensive Condition Assessments (CL-CAC) in FY18-FY21 – at NO COST to parks. CL-CACs bring together the best of facilities and cultural landscape condition assessments: they identify what is functionally lacking, as with facilities CACs, but also suggest modifications to enhance historic character or to stabilize historic resources. A CL-CAC looks at the FMSS locations and assets that comprise a cultural landscape and:

- Updates the FMSS data for the related locations,
- Identifies deficiencies in historic character,
- Develops and costs FMSS work orders for the deficiencies, and
- Assists parks with developing PMIS projects to seek funding to improve the condition of cultural landscapes.

The Washington Support Office Park Cultural Landscapes Program (under the Cultural Resources, Partnership, and Science directorate) and Asset Management Branch (of the Park Planning, Facilities and Lands directorate) are partnering to provide this service directly to parks across all seven regions.

This project builds on an earlier collaboration between PFMD and PCLP. From FY13-17, WASO staff worked with parks and regions to align cultural landscapes features to FMSS location and asset records. Aligning cultural landscapes and FMSS data sets is an important

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The 1812 Oak at Oxon Hill Farm at NACE has a deteriorating root ball and must be monitored for structural instability.

step to recognizing and improving the care of historic landscape resources.

The CL-CAC team is traveling to parks, working with park facilities and resource staff to assess contributing (historic) features, and recommending fixes for things in disrepair or in need of stabilization. The team has expertise in facilities operations, cultural landscapes, landscape architecture, horticulture, and arboriculture.

The CL-CAC team has honed their skills and process at several parks, and would like to thank LYJO, NACE, CUVA, GLBA, WRST, SLBE, HUTR, and PEFO for working with us as we improve the process. Common deficiencies in parks, likely due to lack of expertise and insufficient staff capacity, include:

- Poorly maintained or missing historic vegetation
- Overgrowth of field edges, views, and vistas
- Minimal turf maintenance
- Inappropriate mulching
- Deteriorated paving and masonry features
- Features that have received no or minimal maintenance
- Incompatible features added to cultural landscapes

We're soliciting interest and building our work plan for FY 2019-21. (Our FY18 work plan is fully booked!) If your park is interested in having WASO staff come

Staff evaluate a volunteer lilac too close to the foundation of a Cottage Row building on North Manitou Island at SLBE. A cutting can be taken and planted further out.

and work with staff to assess the condition of cultural landscape-related FMSS locations (according to Facilities Comprehensive Condition Assessment protocol), and meets the criteria, please contact the following staff:

- For AKR, IMR, and PWR parks: Corinna Welzenbach, Historical Landscape Architect and ISA Certified Arborist, at corinna_welzenbach@nps.gov or 206-220-4276
- For MWR, NCR, NER, and SER parks: Stephanie (Nelson) Sanidas, Historical Landscape Architect, at stephanie_sanidas@nps.gov or 617-241-6954 ext. 270

Upcoming Training Opportunities

Olmsted Center for Landscape Preservation

Accessible Unpaved Trails and Boardwalks
Concord, MA, March 27-29

Historic Preservation and Youth Development
Richmond, VA, March 20 & April 9-13

Orchard Care Workshop
Quincy & Concord, MA, April 2-6

Park Landscape Turf Management Workshop
Washington, D.C., May 15-17

National Preservation Institute

Landscape Preservation: An Introduction
Fredericksburg, VA, April 24-25

NEPA Compliance and Cultural Resources
Los Angeles, CA, April 10-11

Vanishing Treasures

Guiding Principles for Implementing Field-Based Historic Preservation
Santa Fe, NM, March 13-15

DOI Learn

Foundations of Asset Management
Online, self-paced course

Rockin Walls

Freestanding Wall Workshop
Hampstead, MD, April 14-15

PNW-ISA

PNW-ISA Women's Climbing Workshop
Stanwood, WA, June 1-3, 2018
Register by April 12

Pests and Diseases: Anthracnose: The Achilles Heel of London plane and American sycamore

American sycamore and London plane trees grace our NPS cultural landscapes with stately beauty. The muscular, iconic form of the "camouflaged-trunk" American sycamore and its hybrid offspring, the London plane, can be found in parks from East to West. Whether in Valley Forge National Historical Park in Pennsylvania (photo below), the Boxley Valley of Buffalo National Scenic River in Arkansas, or at Eugene O'Neill National Historic Site in California, these versatile trees offer statuesque historic character and welcomed shade.

Despite their durability, these trees have an Achilles heel in the form of Anthracnose, their most serious disease. Caused by the fungus *Apiognomonia veneta*, Anthracnose can kill young, unestablished trees and weaken older trees, making them more susceptible to pests and other diseases. Anthracnose causes shoot dieback, defoliation, and a "witch's broom" effect from repeated dieback and regrowth, rather like tree-topping. Over time, Anthracnose-diseased American sycamore and London plane trees develop a ragged appearance from limb breakage and loss.

18th century American sycamore at Walnut Hill Spring House, VAFO

Anthracnose causes "Witch's Broom" effect in American sycamore and London plane, due to repeated shoot dieback and regrowth.

Anthracnose attacks in the cool, wet temperatures of early spring. Damp days in the 50° to 55° F range cause fungal spores to germinate and spread vigorously. Infection is first seen in new buds and leaves. Leaves crinkle, turn brown, wilt, and fall, giving the appearance of frost damage. Older leaves develop dark and sunken dead areas along their veins. Infected trees may drop all of their early leaves and replace them in May and June. The fungus spreads from the leaves to twigs and branches, creating cankers and causing girdling.

While Anthracnose is almost impossible to eradicate, these sanitation and cultural techniques minimize the impact of the disease (note, steps 1 - 4 are BMPs for all significant tree species in cultural landscapes):

1. Avoid stress on American sycamore and London planes through adequate watering, aeration and nutritional mulching. Stressed trees are more susceptible to all pests and diseases, and reduction of stress encourages vigorous growth and quick recovery from defoliation.

2. Rake and remove fallen leaves and twigs as much as possible[1] , especially in the fall. This reduces the overwintering population of fungus and limits infection of new leaves in spring.

3. Prune the tree, cutting out cankers and unhealthy tissue from infected branches and opening up the canopy for better air circulation and light penetration. Between every pruning cut, sanitize pruners by dipping them into a 10% bleach-in-water solution.

4. Maintain healthy soil. Conduct a soil test (see our Fall 2017 Newsletter). Fertilize, if needed, within the dripline of the tree. Add an annual application of nutritional mulch to help Anthracnose-infected trees recover.

5. For young trees, spray a topical fungicide containing lime sulfur (Bordeaux Mixture) as

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buds open into leaves. Repeat spraying after rain on a biweekly interval until temperatures increase above 60 F.

6. Mature, significant specimen American sycamores and London planes can be treated with trunk injections of a systemic fungicide, such as Arbotec 20S. This is done in the fall by a certified Arborist and can provide protection for up to 3 years.

For rehabilitation treatments of cultural landscapes where new London plane trees will be planted, selecting an Anthracnose-resistant cultivar is advisable. The newer cultivars 'Bloodgood', 'Columbia', and 'Liberty' all have resistance to Anthracnose. At the Gateway Arch National Monument, the cultivar 'Bloodgood' was used to rehabilitate the cultural landscape, to replace Greenhill Ash trees susceptible to Emerald Ash Borer. More than 800 London plane 'Bloodgood' have been planted in formal allées first designed by Modernist Landscape Architect Dan Kiley in the 1960s. The geometry and uniformity of the allées is a character-defining feature of the National Historic Landmark. This webcam shows progress on the rehabilitation project at JEFF.

Anthracnose kills new leaves of American sycamore and London plane.