Landscape Culture

a newsletter for cultural landscape stewards

Cultural Landscapes Program Summer 2019

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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:

Replanting John Muir's Victorian Garden

John Muir's home was situated among Victorian-inspired grounds of mass plantings, exotic specimens, gardens, and open spaces. Unfortunately, the grounds that once existed had virtually disappeared until recently. A plan to rehabilitate and improve the grounds was first identified in a Cultural Landscape Report (CLR) and the effort is now underway, led by the park's Horticulturist and Arborist, Keith Park.

Historic photo of John Muir house. At the time of aquisition by the Naitonal Park Service, the grounds were overgrown and much of the original landscape was lost (NPS).

The plan was to rehabilitate and improve the grounds surrounding the Muir House by planting appropriate shrubs, vines, and ground covers. The CLR identified some of the former plants, but where knowledge gaps existed, additional plants were selected that had drought tolerance, resilience, and overall sustainability, as well as a similar character to the originals. To get a good sense of the intended character, historic photos were referenced along with Helen Muir's accounts of her mother's preference for fragrant plants. Not all of the chosen plants were available during the 19th century, but will provide an essence of the grounds in John Muir's time.

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Keith Park holds up a site plan from the Cultural Landscape Report, with the John Muir House behind (NPS).

Practicality was also a part of the garden's project plan. For example, some beds had no record of what was planted there during the period of significance, but based on their location in direct sun, the park avoided planting anything fragile. Instead, the beds were turned into a home for succulents. Succulents are the most practical choice given their resiliency and compatibility with the historic character, even though they were most likely not in the original garden. Here's the final plant list.

The park received assistance from an enthusiastic group of volunteers to install the new plants. An archeologist has been on site during the process, to monitor the ground disturbance and help protect the resource-rich area. Archeological features such as terracotta bottles from Muir's time have been uncovered.

Historic and Modern Irrigation Plans

The rehabilitation of the grounds also involved a plan for irrigation. The park unit has two historic wells that date back to the period of significance (1849-1914). Not only do they provide free water, but their use aids their preservation. The only con is that the wells run low in summer and are at a lower grade than the grounds, requiring a pump for the water to reach the plant beds.

For this reason, the park created an irrigation system where the city water supply, which is cleaner and has a more ideal water pressure, could be connected to supplement the historic wells. Now, when the water in the wells is low, a staff person or volunteer can easily switch from the wells' water supply to the city's. The new drip irrigation system waters plantings efficiently and the drip lines are simple to cover up with mulch, making them invisible to visitors.

Replanting History

> "I approach historic landscapes as a curator would treat a historic house museum. Just as the furnishings and materials on display in a house museum should reflect the appropriate historic period, so too should a historic landscape reflect the character, feeling, and level of care that it had during the historic period. In other words, casual observers and landscape historians alike should be able to see the landscape as it appeared during the historic period."
>
> -Keith Park

The grounds of the John Muir house have received extensive alteration over the last 100 years. Before the current rehabilitation efforts, the plants of the garden area did not speak to the site's historic significance. Post replanting, visitors will be able to gain a deeper understanding of its importance. With the garden's strong sensory aspect, many visitors and employees will be able to smell and feel their way back in time.

View before and after photos in this project album.

Volunteers at John Muir National Historic Site assist with the replanting project (NPS).

After the replanting project, the garden outside the John Muir house begins to take shape again (NPS).

Employee Spotlight

The perennial garden at GRKO.

Name: Lanette King

Job Title: Gardener and grounds-keeper. I care for the lawns, gardens, and flower room at Grant-Kohrs Ranch NHS.

Park: Grant-Kohrs National Historic Site in Deer Lodge, Montana.

Years with NPS: 34 years as a seasonal employee

What is your background?

I grew up helping my Dad with the vegetable garden and he, early on, realized "chemical warfare" (this was the 1960's) was not building soil and messing up bio-diversity. I worked maintenance for three years then fell into keeping the grounds when the person who had taken care of them before retired. The vegetable garden was tended by the Rancher and the flower garden was still very overgrown. I began reclaiming it and found it very rewarding, having so many clues as to Mrs. Kohrs's garden, made it not just my job but a labor of love. It has awarded me with the amazing privilege of watching the same landscape both change and stay the same. I've learned a lot over the years, not only what to do but what not to do as well...and still learn each day. When the Rancher retired I began tending the vegetable garden as well.

Having had the opportunity to do building preservation, then grounds preservation, I realized early on that the landscape ties the structures to the site. Working with the same landscape for so long, I've learned to read the plants and insects that frequent them.

Best part of my job?

I get to talk to the visitors, I get to watch the plants and insects, I get to be outside.

What is the most inspiring project you have been a part of?

Reclaiming Mrs. Kohrs's garden. I'm pretty sure she was there to help me find the clues left behind.

Selecting Nursery Stock Part 2: Plant Inspection

In the last issue we discussed nursery stock selection related to production method and plant size. In addition to specifying these basic details, nursery stock should be inspected for quality. Just like individual pieces of fruit in the grocery store vary in quality, individual nursery plants of the same species, size, and production method may differ considerably. Defects in nursery stock can occur from the roots to the leaves, and plants should be thoroughly examined before purchase.

Roots

The root collar (also known as root flare or trunk flare) is the zone between the trunk and the roots. In older trees this area is wider than the trunk, creating a flare. Roots emerge at the base of the root collar. In nursery stock the bottom of the root collar should be at or slightly above the level of the soil. Planting too deeply can significantly affect tree survival: the bark touching the soil is prone to rot and deeper roots may not receive sufficient oxygen. Inspect a plant by removing soil around the base until the first major root is visible. The top-most roots should be no deeper than one to two inches within the soil.

Inspecting roots of nursery stock may seem difficult because roots are hidden. However, the most severe root defects of circling and girdling roots can often be seen in the top of the container or root ball. Circling roots encircle the outer edge of the container and girdling roots encircle the base of the tree. Most nurseries allow patrons to remove plants from containers or pull back the burlap to inspect a plant's root systems. For balled and burlapped plants, avoid trees with large roots cuts at the edge of the root ball. Instead, select trees with a combination of small to medium structural roots and finer roots at the root ball

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Circling and girdling roots (University of Florida Environmental Horticulture).

perimeter. For container plants, if roots form a mesh around the edge of the container, the plant is root bound. While not ideal, this is not a rejectable defect because cutting the edge of the roots before planting can encourage root distribution.

Trunk and Branches

When inspecting the trunk, ensure that the trunk emerges from the center of the container or root ball. Look for a straight trunk without cankers, bore holes, or major wounds. Pruning cuts on the trunk should be healed or cut at the appropriate location to allow for healing (outside the branch collar). When purchasing a tree, generally, the tree should have one central leader. Avoid trees with codominant stems, because they are more prone to failure. (This is not relevant to trees that are bred to have multiple trunks such as witch hazel, jacaranda, and strawberry tree.)

Branch arrangement and attachment will also influence future tree growth. The largest branches should be less than two-thirds the width of the trunk one inch above the branch union. Select trees with a balanced shape (branches growing around the entire stem at consistent vertical spacing). In addition, look at the angle branches emerge from the stem and avoid trees with tight branch angles (<45 degrees). (Not relevant

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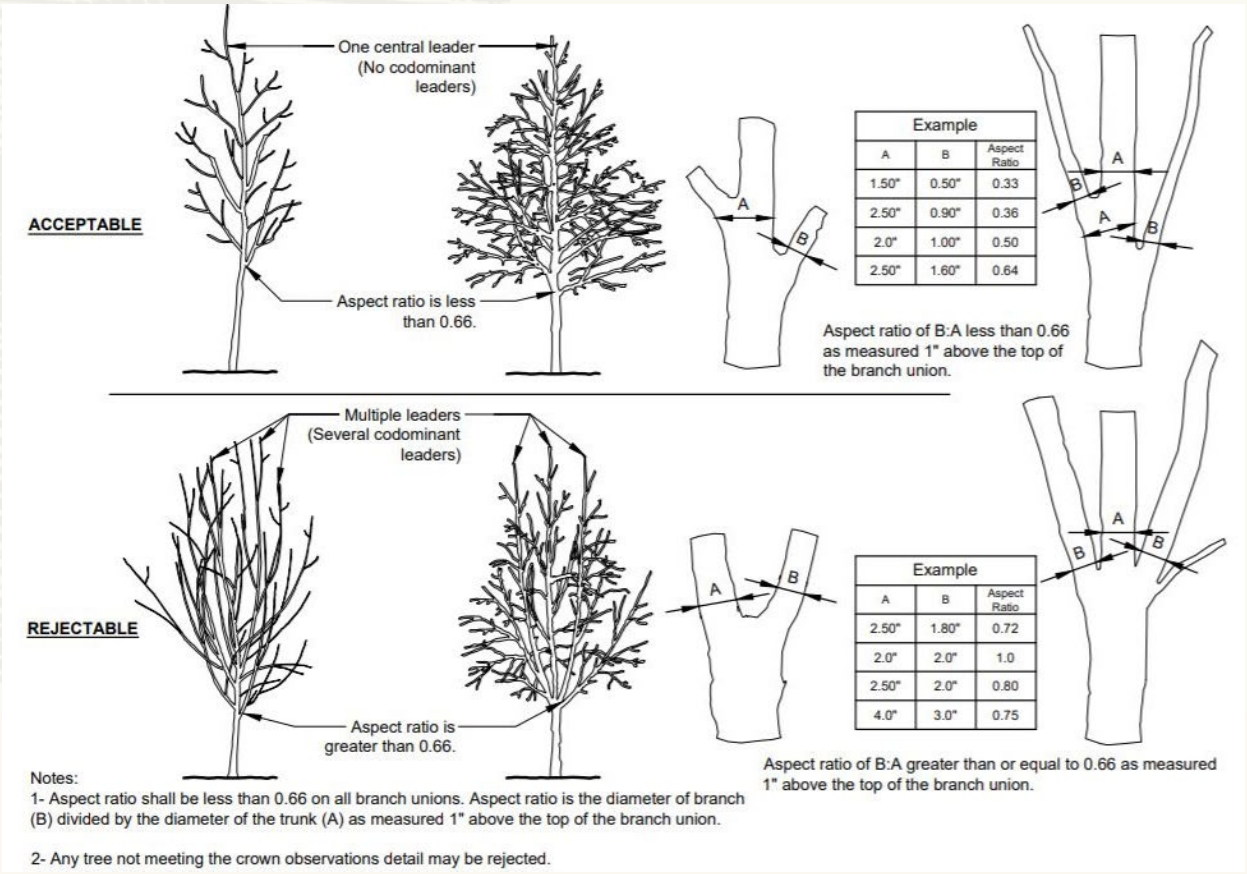
Crown inspection guidance for high branched trees (Urban Tree Foundation).



for species of tree with narrow branching structure and vertical habit.) Avoid trees with included bark at the branch/ trunk intersections (this is bark that has merged and fused in the space between the branch and trunk).

Leaves

Leaves can be the most obvious indicator of tree health. The presence of new growth is a general indicator of the health of the plant. Top die-back can indicate that the tree was planted too deeply or the presence of disease. Leaf color can indicate a nutrient deficiency, stress, and disease. Look for damage to leaves from pests and avoid trees with more than very minor leaf damage.

Leaf scorch, a sign of water stress (West Virginia University Extension).

Plant Inspection Checklist

The Urban Tree Foundation developed open source detail drawings for plant inspections that can be added to landscape contracts. For non-contract work, consider checking local wholesale nurseries to see if they sell directly to government entities, as they will have a larger stock and lower prices than a retail nursery. When purchasing nursery stock, use the following basic inspection checklist:

» Roots emerge no more than two inches deep within the soil.

» Roots do not circle or girdle the base of the plant.

» Trunk is straight and free of defects.

» Tree has a single central leader or can be easily pruned to create one.

» Branches are distributed evenly at wide angles with no included bark.

» Main branches are less than two-thirds the width of the trunk.

» New growth is evident and leaves are free of insect damage.

Announcements & Publications

Job aids for Project Scoping Tool (PST) in FMSS (Common Learning Portal log-in required)

Recent Cultural Landscape Publications:

NPS Golf Courses in the National Capital Region:

» Treatment Guidelines Cultural Landscape Report

» RFP for golf course leasing opportunity, with grounds specifications

Climate change and Colonial National Historical Park:

» Integrated coastal climate change vulnerability assessment

» Method for integrated coastal climate change vulnerability assessment

Ohio and Erie Canal History and Historic Structure Assessment

Pests and Disease: Deer

The graceful, elegant deer figures prominently in our mythology, from the white stag emblazoned on the heraldry of English kings to the fleet footed divine messenger found in Shinto legend. Deer Woman, a spirit associated with love, birth, and uncontrollable passions, appears in the mythos of many Native cultures. The deer has captured imaginations for millennia, from legend of old to modern tales on the silver screen.

Today's combined population of whitetail and mule deer is from 17 to 21 million. Over-hunting reduced their numbers to half a million by the early 20th century, and today, management regulations are aimed at rebuilding the deer population. While important to the ecosystem, imbalances in deer populations can threaten the health of cultural landscapes. Turf and agricultural fields mimic natural deer habitat, providing attractive environments relatively free of natural predators that can exacerbate conflicts between humans and wildlife.

Many parks contend with the challenges of deer overpopulation in everyday operations. Deer can damage agricultural and ornamental plantings, strip trees of bark and foliage, and trample understory plants and tree seedlings. Deer migration can spread the seed of invasive species and over-browsing may stress native environments so that invasive species have a more advantageous growing medium. Issues with deer in the cultural landscape can range in scale. Deer may cause damage to culturally sensitive specimen trees in a historic orchard or browse on ornamental plantings in a period garden. Large populations may weaken entire ecosystems, threatening the health of agricultural fields or forest ecosystems critical to historic integrity.

Reducing the impacts of deer on a cultural landscape begins with monitoring resident populations and their effect on the environment. Once a complete picture of the problem has been ascertained, strategies can be implemented to address specific issues at an appropriate scale. It is important to balance the health of resident deer populations with the quality of the environment, the integrity of cultural landscapes, and the safety of park visitors and personnel.

Some strategies reduce access to vulnerable plant materials and discourage browsing. Effective management may only require protection of a small part of the cultural landscape, or temporarily during establishment or critical periods of growth.

Whitetail deer (USDA photo by Scott Bauer, Image Number: K5437-3).

Deer browsing on trees (North Carolina Cooperative Extension, Image credit: CC BY-SA 3.0)

Fencing

Many parks opt to use fencing to limit deer access to vulnerable materials. Fencing in cultural landscapes should meet the Secretary of the Interior's Standards for Rehabilitation, by being visually unobtrusive, or compatible with the historic character of the landscape. Wire fencing is often compatible as it is generally unobtrusive and may have historic precedent in the landscape.

At San Juan Island National Historical Park, park staff installed fencing around replacement trees in the Sandwith Orchard to protect them during establishment. The 8' tall, welded-wire mesh cages were removed after the majority of the canopy had grown beyond deer grazing height, after 3 years.

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Construction of deer fencing around historic orchard tree replacement plantings at San Juan Island National Historical Park (NPS).

Deer resistant fencing with an electrified wire protects the historic Lydston orchard at Manzanar National Historic Site (NPS).

At Manzanar National Historic Site, park staff installed a permanent fence around each of the historic Lydston and Wilder Orchards, in accordance with the park's Orchard Management Plan. The fence protects against deer and Tule elk. Gates in the fencing allow access for visitors and park staff. While the planning and design of a large, permanent fence is more involved and expensive than a temporary barrier, the fence allows for easier access to maintain trees than individual cages, and is a long-term investment in protection.

Repellents

Applications of repellents produce a smell or taste that makes an area or plant materials less attractive to deer. Both organic and chemical options are available, though organic, biodegradable options are preferred due to their reduced impact on the ecosystem. Effectiveness may vary depending on many factors, and park staff should experiment with different brands to determine what will work best in their situation.

Compatible Deer Resistant Plantings

Deer populations can complicate replanting, re-establishment, and continued care of plant materials within a park. At Monocacy National Battlefield, efforts to reintroduce native American chestnut were stymied by voracious deer. The vigilance necessary to overcome the deer threat was considered to costly and manpower intensive. The impact of deer may figure into long term planting plans.

In some situations, alternative plant materials might be an option. When replanting historic plants, consider compatible deer-resistant varieties appropriate to the historic character of the park. At Hampton National Historic Site, deer resistant Japanese Plum yew was substituted for Canadian hemlock, a plant prone to deer browse.

Deer resistant varieties vary from region to region. State cooperative extension services and horticulture research groups, often associated with state universities or large botanical gardens, provide up-to-date information regarding deer resistant plant varieties within their area. Some examples include the University of California Cooperative Extension, the New Jersey Agricultural Experiment Station at Rutgers University, and the University of Georgia Cooperative Extension.

Relocation and Population Reduction

In parks where deer populations have dramatically affected the health of natural and cultural resources, drastic reductions may be appropriate. Deer relocation is possible, but may be risky for the deer and costly for the park.

With proper compliance, parks have opened property to local hunters and hired sharpshooters to cull deer after park operational hours. At Antietam, Manassas, and Monocacy National Battlefields have utilized this method and donated many pounds of venison to local food pantries as part of this operation. Culling operations require coordination between Parks, Fish and Wildlife agencies, and other groups involved in wildlife management, as well as extensive public outreach.

Several Parks' reports offer a comprehensive overview of deer management options and operations. For further reading, please see the Rock Creek Park Final White Tailed Deer management Plan/EIS (2011) and the Antietam/Monocacy/Manassas National Battlefield Final White-tailed Deer Management Plan and Environmental Impact Statement (2014).

Tool of the Moment: Small-Blade Sharpener

A sharp blade on your hand pruners means cleaner cuts that heal faster and promote healthy plant growth by reducing opportunities for pests and diseases to take hold. A sharp blade prolongs the life of the tool, makes pruning easier, and is beneficial to pruned plants.

Pruners and other tools with small blades can be sharpened with a grinding stone or sharpening file.

Sharpeners may be made of stone, hardened steel, or a synthetic material and have one or more levels of coarseness. Coarser grits are used to remove damaged metal edges while finer grits provide a smooth finish.

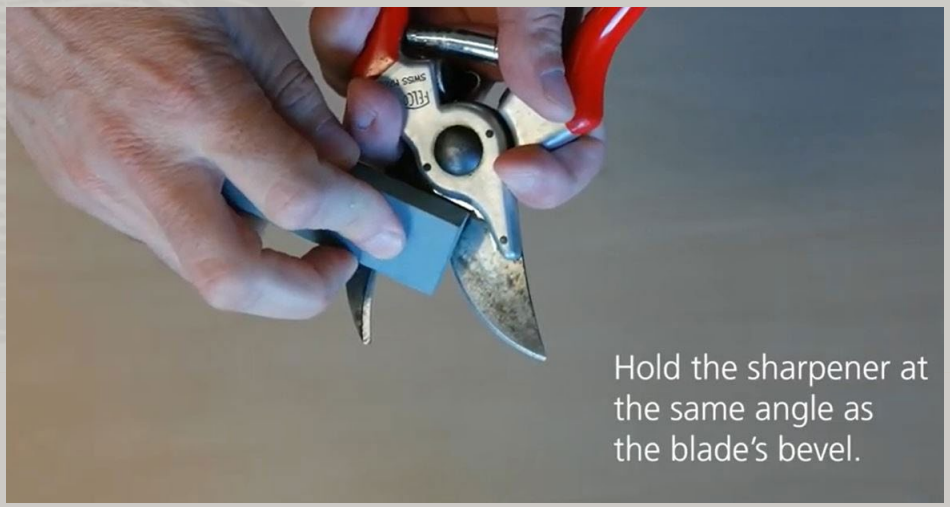
Block and file style sharpening tools.

Some sharpeners are more effective when moistened first with water, oil, or gasoline. Check the instructions for information on each tool's features and usage.

Before sharpening hand pruners, determine if they are an anvil or bypass type. Bypass pruners have a blade that slides down next to—bypassing—a stationary edge. Bypass blades are beveled on the outward facing edge and only require sharpening on that side.

Check out this short video on how to sharpen a pair of bypass pruners or follow these steps:

1. Moisten the sharpener if called for by the instructions.
2. Unlock and open the pruners so that the blade is fully exposed.
3. Hold the pruners firmly in your non-dominant hand with the edge to be sharpened facing up.
4. Hold the sharpener in your other hand at the same angle as the blade's bevel. For Felco brand pruners, this is 23° but it is usually between 10° and 20°.
5. Beginning at the inside of the blade closest to the handle, gently work sharpener up the blade toward the tip with a small circular motion. There is no need to press hard; let the sharpener do the work.
6. Repeat Steps 4-5 until a sharp edge is attained, switching to the sharpener's finer coarse surface, if available.
7. Turn the pruners over and remove any burrs on the opposite side of the blade with the sharpener.



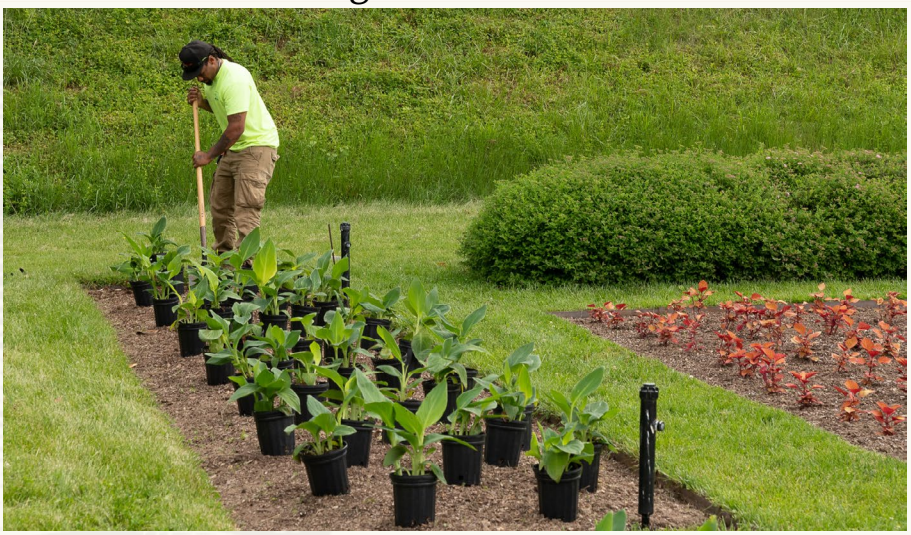
View a video of a small blade sharpener in use here.

Video Corner

Parterre Planting

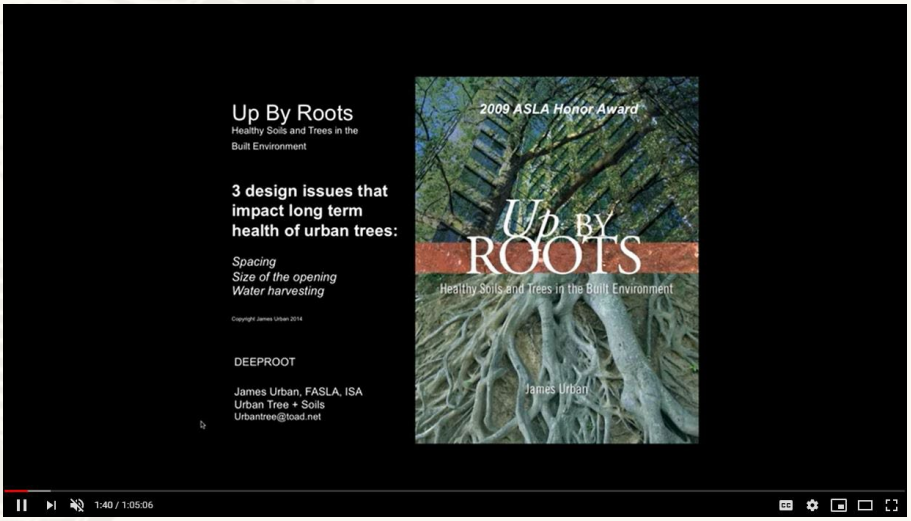
Timelapse video of May 2019 parterre planting with volunteers and partners at Hampton National Historic Site (Courtesy of Tim Ervin via Flickr).

Read More



Webinar: Three Design Issues that Impact the Long-Term Health of Urban Trees

This webinar by DeepRoot discusses the biological and arboricultural basis of urban tree requirements. It shares critical lessons, ways of achieving solutions that meet the needs of design and the trees themselves, and where changes in design are needed to create sustainable tree plantings.

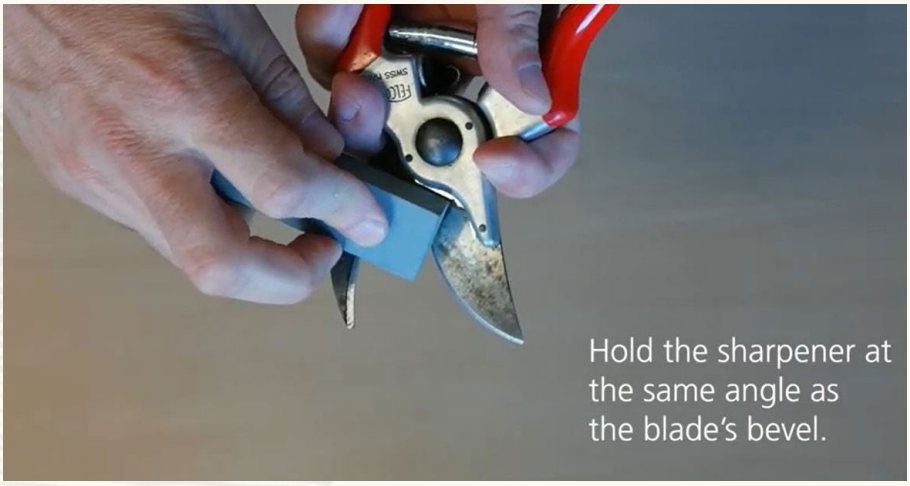


Webinar: Remediating Compacted Soils Compromised by Urban Construction

This presentation from the TREEFund webinar series in partnership with the Utah State University Forestry Extension examines the effects of urban development on soils. Speaker Nina Bassuk has been a professor and program leader of the Urban Horticulture Institute at Cornell University for the past 38 years.

Tool of the Moment: Small-Blade Sharpener

Demonstration of the small-blade sharpener. Don't miss the side panel of this newsletter edition for more details about this useful tool.



Upcoming Training Opportunities

Vanishing Treasures

Integrated Pest Management for Cultural Resources
Grand Teton National Park
October 8 - 10

Pre-contact Masonry Preservation and Repair
October 21–25
Wupatki National Monument

Guiding Principles for Field-based Historic Preservation
October 22–24
Golden Gate National Recreation Area

Preservation of Cultural and Wilderness Resources: Achieving Common Ground
October 22-24
Yosemite National Park

National Preservation Institute

Landscape Preservation: An Introduction and Advanced Tools for Managing Change
October 22–24
Portland, OR

Cultural and Natural Resources: An Integrated Management Strategy
November 5-6
San Diego, CA

Pacific Northwest International Society of Arboriculture

Advanced Tree Risk Assessment
Advanced Tree Risk Assessment
Surrey, BC

ISA Tree Risk Assessment Qualification
November 18-20
Seattle, WA

Webinars

Can We Vaccinate Trees to Protect Against Diseases?
TREEFund
August 29, 12pm CT

The Landscape Architect in the Nursery: Tagging Trees and Enforcing Specifications
TREEFund
September 10, 12pm MT

Communities & Wildfire
Arthur Carhart National Wilderness Training Center
September 10, 1pm MT