

Landscape Culture

a newsletter for cultural landscape stewards

Cultural Landscapes Program

Winter 2019

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Engaging Volunteers at Acadia and Alcatraz

Most parks have more work than their staff can handle. This is multiplied in cultural landscapes where maintenance needs may be poorly understood or not prioritized. With skilled guidance by park staff, volunteers can help address maintenance needs while providing the community meaningful opportunities to engage with parks.



Volunteers chipping yard waste for Alcatraz Garden's compost (photo Shelagh Fritz).

We interviewed two standout volunteer organizers, Dianna McKeage and Shelagh Fritz, about the programs they run. Dianna McKeage (DM), the Volunteer Coordinator at Acadia National Park (ACAD), graduated from the University of Maine and has worked in twelve national park units doing everything from trail maintenance to interpretation. Her current position combines the skills she learned across divisions. Shelagh Fritz (SF), the Garden Manager at [Alcatraz Gardens](#), has a background in horticulture, including work at Longwood Gardens in Pennsylvania and Syon House estate in England. In her over five years with the Golden Gate National Parks Conservancy, the non-profit partner of Golden Gate National Recreation Area (GOGA), she has been instrumental in leading the restoration of the

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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:



ornamental gardens on Alcatraz Island.

We hope that learning more about Dianna and Shelagh's vibrant volunteer programs will inspire you to build or expand volunteer programs to benefit your park's cultural landscapes.

Please describe your volunteer program.

DM: We have a very robust volunteer program here at Acadia. Last year 4,300 individual volunteers donated a total of 74,000 hours. Volunteers are a part of every division, and are the heartbeat of the park. Our Stewardship Program is a partnership program with Friends of Acadia. It has a 6 month season each year, in which we host and lead 3 trail maintenance drop-in days a week, and take a number of groups out to do service projects in the field. This is a long standing program, in which we provide the projects, tools, and transportation. We have trained and appointed volunteer crew leaders who assist us in the field. The program is so effective and popular, that most volunteer participants have been members for 5-10 years. Attendance to this program in the peak summer months is over 40 people per drop-in day.

SF: The volunteer program for the Gardens of Alcatraz offers gardening opportunities several times a week to different audiences. We have a regularly scheduled gardening volunteer program twice a week that participants need to pre-register for and commit for a minimum of two months. We also have youth and company volunteering programs where the groups come out once and help-out. The fourth Saturday of the month is for families to come out and volunteer. For corporate groups, we have begun a 'Rock Star' where teams from a company will come volunteer. Aside from gardening activities, we also have volunteer docents who lead garden walking tours and a casual 'Ask the Gardener' drop-in of garden areas. For gardening activities, volunteers are involved in most aspects of stewarding the gardens –weeding, watering, pruning, propagating, and composting.

How do you recruit volunteers?

DM: We recruit using [our park partners](#) and [the park's website](#).

SF: Volunteers are recruited through a few different ways. Searching online for volunteer opportunities in San Francisco leads people to [the Golden Gate National Parks Conservancy webpage](#). This website lists all the opportunities within GOGA, including the



Volunteers in the Acadia sign shop (NPS photo).

Alcatraz Gardens. The NPS also has their own webpage where we are listed, as well as other online volunteer sites. Volunteers also find out about us through word of mouth, visiting the island and seeing us work.

What types of work do you find are best suited for your volunteers? Are there some types of work that you find are not suited for volunteers?

DM: Volunteers can assist operations in endless capacities, from assisting with campgrounds and the visitor center, to grooming carriage road trails for winter recreation, using telemetry to monitor bat populations, and assisting with photo editing projects. The only barriers to volunteers are getting the proper training and staff support.

SF: There are many types of work that is suited for volunteers. We have a wide range of volunteers who like doing different tasks. Some people enjoy more physical work of clearing ivy and overgrowth, running the chipper and turning the compost piles, while others prefer sifting soil, weeding, planting, sweeping roadways, and deadheading flowers. A few of the volunteers have their own area they tend every time

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they come out. I want to find tasks that people are excited to do and they feel pride in their work. For every ability, I'm able to find gardening tasks.

Types of work not suited for volunteers are anything that would be a safety hazard – working on steep slopes with a falling risk, working around lead-based paint, large tree pruning. There are some jobs that are easier working with my paid staff such as pruning roses and the historic fruit trees and fixing irrigation leaks.

What do you think draws volunteers to spend their time at your park?

DM: ACAD is a wondrous place where the mountains meet the sea. The park is very accessible and offers a wide array of recreational opportunities for mixed ability levels. You can hike a mountain in the morning to watch the sunrise, catch brunch in Bar Harbor with friends, bike the carriage roads in the afternoon, experience fine dining later that evening, and end the day with a short sunset paddle.

SF: I think volunteers are drawn to Alcatraz because of its uniqueness. Taking a boat to work and being allowed to work in closed areas where the public does not have access are special perks. The chance of doing something different, such as gardening on Alcatraz, is always a good conversation starter too.

While volunteers likely get involved because they want to give back to their community or wish to garden but

don't have their own garden, they also end up making really good friends with the other volunteers. The volunteer experience becomes very social and they come each week to work with their friends.

Is there a general demographic of your volunteers (retirees, youth)?

DM: Most of our volunteers are retirees.

SF: The demographic of the volunteers who attend the weekly volunteer programs tends to be retirees. The gardening dates are on Wednesdays and Fridays, so most adults work during this time. While we do have an older demographic, gardening keeps people young! I think my oldest volunteer is 80 and can walk up the switchbacks faster than most visitors.

What advice would you give to someone establishing a volunteer program?

DM: Develop short term and long term opportunities for volunteers. This includes one day special events, and reoccurring programs like the Stewardship Program, as well as season long positions such as educational interns, and campground hosts. Once you have this variety established, you then need to make sure you are consistent with your service opportunity offerings and with the structuring of those events and projects. People like to know what to expect.

SF: My advice for someone establishing a volunteer program is to self-promote and to take every opportunity to let people know about what you are doing. For example, we are beginning a new volunteer program at Fort Mason to steward the Black Point Historic Gardens that overlook Aquatic Park in San Francisco. We are trying to meet shareholders of this area – residents, businesses, high schools, gardening enthusiasts, historians who may be interested in getting involved. We have been doing flyers in local businesses, neighborhood associations, community groups, local high school classes, tabling and we are slowly building up a group of people who come out.

When choosing which days to offer your volunteer program on check and see what other opportunities are offered on that day to avoid conflicting interests. Think about what audience you wish to invite and make it easy for people to participate for the days and time.



Volunteer weeding a perennial bed at Alcatraz Gardens (photo Shelagh Fritz).

Employee Spotlight



Name: Ahsa Jensen

Job Title: Grand Canyon Native Plant Nursery Manager

Years with NPS? 6 years

What is your background? I've worked at GRCA for the last six years. I have over nine years of experience as a native plant nursery specialist.

Describe your position.

I manage Grand Canyon's native plant nursery facility that includes two passive solar-designed greenhouses, 1/4 acre seed increase field and an acre of grounds that stores over 20,000 plants. I also oversee plant material collections for the vegetation program. This includes native seed and cutting collections for propagation and seeding habitat restoration projects, as well as plant collections for the Grand Canyon Herbarium.

Our program focuses on native plant material collection and has specific guidelines for each restoration project. Our protocols include collecting seeds or cuttings for propagation within a ten-mile radius...to ensure genetic integrity of the vegetation. Our restoration sites vary from habitat restoration in the canyon to re-vegetation of cultural landscapes throughout the developed areas of the park.

What is your favorite/most inspiring project or your favorite part about your job?

I'm continually inspired by all of the people that choose to volunteer their time working with me at the nursery! I feel so fortunate to be able to work with our volunteers and crews to support habitat restoration throughout the park. It's rewarding to see plants at a site, in which I have collected the seed, propagated at the nursery and then out-planted, and it's even more rewarding to share that experience with others.

One of my favorite projects that I have worked on is the re-introduction of Grand Canyon's only endangered plant, the [sentry milk-vetch](#) (*Astragalus cremnophylax* var. *cremnophylax*). There are three re-introduction sites that we have planted and monitor annually. The plant only grows right on the edge of the canyon, so site access can be challenging, but the views are always beautiful.

What inspired your interest in working with plants?

I've always loved being outside, tending to gardens, landscaping and growing plants. When I was in high school I learned about permaculture and it inspired me to always consider the landscape and our effects on natural resources. It wasn't until after I graduated from the University of Oregon that I realized I could make a career out of doing what I love.



GRCA nursery restoration site.



Sentry milk vetch in the nursery.

Tree Replacement: Planning, Planting and Establishment

All trees have a finite lifespan and will eventually need to be removed. When tree removal is needed in NPS cultural landscapes, the preservation objective is generally to replace contributing trees in order to preserve the historic character. These considerations will make your tree replacement project a success.

Clippings cover Planning

Evaluate historic trees at regular intervals and plan for tree replacement as trees begin to show signs of significant deterioration.

Method of Removal

Refer to the Cultural Landscape Inventory (CLI) or Cultural Landscape Report (CLR) to learn about the tree's significance and the treatment plan for the landscape.

Evaluate the method for tree removal during the compliance process. The publication "[Clippings: Replacing Trees in Cultural Landscapes](#)" describes

several methods for tree removal:

- » Promoting a stump to decay
- » Grinding a stump
- » Extracting a stump with a tree spade
- » Excavating a stump with a backhoe

The method is selected on a case-by-case basis, according to the presence of resources to be protected, operational limitations, and future plans.

Method of Planting

Verify the planting location based on the CLR treatment plan. Generally it's preferable to plant in the same location as the historic tree to be removed. Sometimes this is not feasible, and a compatible compromise is made by replanting in a nearby location. The NPS video [Replacing Trees in Historic Landscapes](#) demonstrates techniques for replanting trees in the same location when archeological resources are present. The techniques are:

- » Mound planting
- » Stump planting

Both of these methods use smaller-sized trees, such as less than 2" caliper.

Tree Selection

Verify the species or variety to be planted. Preferably, the historic tree will be replaced in-kind. "In-kind" means with the same species or variety, or if this is not possible, with a compatible species that has similar qualities, including:

- » Similar mature size
- » Similar canopy shape
- » Similar foliage
- » Similar function

Tree Size

While it's tempting to invest in a large replacement tree, it's best to avoid planting trees larger than 4" caliper. Smaller trees adapt better to their new environment than larger, older trees, and will catch up in size quickly.



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Planting

Review the considerations in the Clippings publication for planting trees. In most cultural landscapes, a “Reduced Tree Pit” is most appropriate for planting, as it involves less soil disturbance. Dig the planting hole twice the width of the rootball, and deep enough so that 2” of rootball extends above the surrounding grade.

Backfill the hole with topsoil and apply 2-3” of nutritional mulch to protect the roots from dehydration and stimulate soil fertility. Apply water and stake the tree immediately.

Double-stake along the windward-leeward axis and connect the trunk to the stakes by flexible padded ties that allow some swaying movement and do not cut into the tree bark.

Protect trees subject to animal browse by enclosing trunks in a tree guard, wrapping with vole tape, or surrounding the tree with a cage of 6 to 8’-tall hog wire and T-posts. When caging trees, allow “gate” access for pruning, mulching, and adjusting stake ties.

Establishment

Most young trees have an establishment period of 2 to 3 years when they need extra care to ensure their survival.

During this period apply 1” depth of irrigation water per week, in lieu of precipitation.

Increase the diameter of the mulch to match the growing canopy’s dripline. Hold mulch away from the tree trunk by 2”, and maintain 2 – 3” depth.

Check tree stakes for stability and loosen ties to permit trunk movement. Remove the stakes as soon as the tree is firmly rooted.

Prune the tree in the dormant seasons to remove crossing branches and establish a structure of outward radiating branches. Find pruning guidance on the [Common Learning Portal](#).

Remove the cage when the majority of the canopy has grown above browse height.



Tree planting at EUON (NPS photo).

Announcements, Publications, & Conferences

Two CLRs have recently been completed:

- » [Cultural Landscape Report for Chancellorsville Battlefield, Fredericksburg and Spotsylvania National Military Park](#)
- » [Cultural Landscape Report for Governors Island National Monument, Volume II: Treatment](#)

Check out these presentations on managing trees:

- » [After the Storm: Presentations and resources from Symposium co-hosted by PNW-ISA and UW Botanic Gardens](#) (Dec 5, 2018)
- » Three Design Issues that Impact Long-Term Health of Urban Trees ([webinar, with DeepRoot and James Urban, FASLA](#))

Upcoming conferences of note:

[Visual Resource Stewardship](#)
October 27-31
Argonne National Laboratory, Lemont, IL

Now accepting abstracts:

[Preserving US Military Heritage Symposium: World War II to the Cold War](#)
June 4-6
Fredericksburg, TX

[National Council on Public History Annual Meeting](#)
March 27-30
Hartford, CT

Tool of the Moment: Stump Grinder

A stump grinder is a power tool used to efficiently and effectively remove a stump after tree removal or loss.

A toothed disc spins at a high speed to chip away a stump while hydraulic cylinders control the grinder wheel, moving it laterally through the stump as it grinds. Stump grinders can vary in size and may be walk-behind machines, large equipment, or attached to other construction equipment.



Stump grinder ready to roll

1. Check that NEPA/NHPA compliance is complete (i.e., no impact to natural or cultural resources).
2. Remember your PPE.
3. Remove rocks from around the base of the stump. You can speed up the grinding by trimming the stump close to the ground with a chainsaw.
4. Start the wheel spinning against the stump until you have ground four inches or more into the ground. Raise the wheel, advance the machine, and repeat.
5. Remove wood chips and then cover the remaining hole with compost and topsoil.

Why Grind?

A stump grinder helps to remove the entire stump, which eliminates hazards of an exposed stump and ensures that pests don't have a nesting habitat. It is faster than decomposition, does not leave a hole in the ground like digging out the stump can, and the grindings can be used as mulch. In historic landscapes, it also allows for tree replacement in the same location by planting at the site of the ground stump.

Pests and Diseases: Powdery Mildew

Powdery mildew is one of the most common and easily recognizable plant diseases, characterized by white or gray powder-like patches, often on the upper sides of leaves, causing premature leaf drop. What we call powdery mildew is actually caused by multiple genera of fungi in the family Erysiphaceae. They all present similar symptoms that can appear on the stems, buds, flowers, fruit, and leaves.

The diversity of powdery mildew fungi means it can affect a variety of vegetation types in different cultural landscapes across the system. Some species are host specific, while others affect multiple vegetation hosts. For example, powdery mildew species in the genera *Sphaerotheca* and *Podosphaera* both infect peach trees, whereas *Sphaerotheca* does not infect apple, and *Podosphaera* infects apple, pear and quince.

The conditions that favor powdery mildew's establishment are different than those that promote its spread. The fungus enjoys dry, warm conditions and, unlike other fungal pests, does not require wet leaves or stems to establish itself. At the same time, high

humidity encourages the fungus's spores to germinate and spread. Hot and humid summer days followed by cool damp nights are ideal conditions for an outbreak. Powdery mildew can spread within a few days under these conditions but usually it takes 7-10 days between infection and symptom development.

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Powdery white splotches on the top side of leaves are a characteristic symptom of powdery mildew. Photo by Jeff Kubina via Flickr.

News

Historic Olive Varieties Revealed by DNA Fingerprinting

The wait is over for the staff of Channel Islands National Park. The results of late 2018 DNA fingerprinting (see Landscape Culture, Fall 2018) reveal the Smugglers Cove Orchard consist of two historic varieties: "Mission" and "Redding Picholine." Of the 105 trees tested, 27 are Mission and 76 are Redding Picholine. Two trees could not be identified



Smugglers Cove upper orchard.

and are probable seedlings.

"Mission" is the classic California olive variety introduced by Franciscan missionaries in the late 1700s. Despite its long journey to California from Morocco via Spain and Mexico, "Mission" is now one of the state's most common varieties grown for table olives. "Redding Picholine" is more unheralded, having been imported by B. B. Redding from Europe in 1872 to serve as a hardy rootstock. The variety proved so hardy that it survived the death of other varieties grafted upon it and would sprout up to bear small olives with large pits. Over time, growers discovered these tiny olives made fragrant olive oil, but the variety had limited popularity.

Today, the Smugglers Cove Orchard is the nation's largest extant plantation of Redding Picholine trees, where the variety was probably planted to yield fruit for olive oil. The orchard is the largest historic olive orchard in the national park system, dating from the 1880s. These results will inform the Cultural Landscape Report treatment plan.

Pests and Diseases: Powdery Mildew, Cont'd

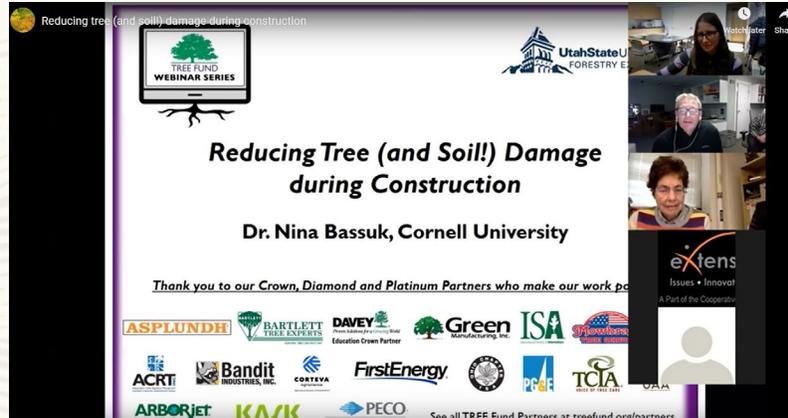
Powdery mildew spores create mycelium on plant surfaces that root themselves into the epidermis but do not further infect the plant's tissue. New succulent growth is more prone to infection than established parts of the plant. Powdery mildew overwinters on plant debris and is spread to host tissue in the spring by wind, insects, and splashing water. Infection is often found on plants that are "unhappy" with their situation, either due to overcrowding with poor air circulation, low fertility, or overly shady, dry conditions.

Treatment

1. Powdery mildew can fatally threaten young shrubs and trees that have become severely stressed by loss of leaves. In mature plants, the disease reduces vigor and impacts aesthetics. Addressing symptoms when they appear can prevent the disease from spreading and will improve the overall health and appearance of the cultural landscape.
2. Try to give "unhappy" infected plants what they need: more water, greater fertility, more air circulation, and better light penetration by irrigating, mulching and pruning closely-spaced plants.
3. Many plant varieties are resistant to powdery mildew. Consider replacing severely affected plants with resistant varieties and replant with wider spacing, if possible.
4. Prune and destroy (do not compost) infected leaves and branches, as well as debris on the ground throughout the growing season. Spread nutritional mulch after removing debris to block the movement of spores from soil to leaves.
5. Don't over fertilize, especially after mid summer, when increased nitrogen stimulates succulent new growth that is more susceptible to infection.
6. Coat foliage with a spray of potassium bicarbonate at the first signs of infection. In severe cases, spray with sulfur or copper-based fungicides to prevent the spread of the fungus. Sprays must be repeated after rain.

Video Corner

Reducing Tree (and Soil!) Damage During Construction



Replacing Trees in Historic Landscapes



Upcoming Training Opportunities

National Park Service

[NPS Working Faller Chainsaw Safety eCourse](#)
Online
Self Paced

[SLBE Orchard Pruning Workshop](#)
Kelderhouse Nursery and Orchard
May 3, 2019

SLBE Barn Workshop
Port Oneida Rural Historic District
June 17-22, 2019

National Preservation Institute

[GIS for Cultural Resources: An Introduction](#)
Fredericksburg, VA
March 6-7, 2019

[Traditional Cultural Places](#)
Sacramento, CA
March 14-15, 2019

[Mount Vernon Regional GIS Symposium for Historical Resources](#)
Mount Vernon, VA
March 22

NCPTT

[Preservation Trades Workshop](#)
Natchitoches, LA
April 26-27, 2019

[Using Lime: A Technical Workshop on Lime and Mortars](#)
Natchitoches, LA
April 29-May 1, 2019

Vanishing Treasures

[Guiding Principals for Implementing Field Based Historic Preservation](#)
Salem, MA
April 30-May 2, 2019

Pacific Northwest ISA

[Preserving Veteran Trees](#)
Seattle, WA (or remotely)
April 3, 2019