

# Landscape Culture

a newsletter for cultural landscape stewards

Cultural Landscapes Program

Summer 2017

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## In-Park Composting Made Simpler

We've all heard that composting is an excellent way to build soils, increase plant health and save waste. We've also heard something about ratios of brown to green material, frequent turning of the pile, and temperature monitoring. These things can be overwhelming.

Is it possible to have a low-key, low-maintenance composting operation in parks and still have landscape benefits? Keith Park, the Preservation Horticulturist and Arborist at JOMU/EUON, has proven that the answer is a resounding "YES!"

Keith started a composting operation four years ago, and has gradually streamlined the process into less than one hour's work per month. With Keith's low-key operation, it takes one full year for the park's vegetation waste to become compost. If you can take more time for weekly turning of the pile, you will create compost more quickly.

*Cont'd pg. 2*



*A compost pile is turned using a loader at JOMU (NPS).*

## 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:



Follow these steps for a low maintenance composting operation at your park:

1. Assemble required equipment: a loader, chipper, hose/water, pick-up truck, screen (see picture to the right).
2. Gather vegetation waste and trimmings.
3. Run larger woody trimmings through a chipper to reduce their size and speed up the decomposition process.
4. Pile all vegetation waste in large pile (do not add noxious weeds or diseased material).
5. Once a month, turn the pile using a loader.
6. Water the pile with a sprinkler in the dry season to aid decomposition.
7. After twelve turnings (a year later), the pile will have turned from a dry, lumpy mess to a smoother mixture looking more like soil.
8. Extract fine compost by screening the mixture. To build a screen: attach a sheet of welded-wire mesh just larger than a pickup truck bed to a wooden frame (see photo below). Lay the screen horizontally on top of the bed of the pickup, scoop and dump a bucket of compost with a loader onto the screen. Screened compost will fall through the mesh and fill the bed of the pickup.
9. Return the larger woody pieces that don't fit through the mesh to the compost pile for another year's decomposition.
10. Mix the compost with wood chippings to create nutritional mulch, or spread the compost alone as a soil amendment.



*Park employees screening compost into a truck bed to eliminate large pieces of wood and debris.*

At JOMU, spreading compost and nutritional mulch has greatly improved the health of many fruit trees associated with the historic livelihood of John Muir. With the help of

compost, the park is able to avoid synthetic fertilizers and reduce the frequency of watering.

The secret to this effect is soil biology. Compost is teeming with microbes that release soil nutrients to plant roots. Incorporating compost or spreading nutritional mulch kick-starts microbial activity in the soil, increasing the availability of nutrients and water-holding capacity and creating more air spaces.

At JOMU, the benefits are obvious. Tree foliage is greener, plants are healthier, and the environment is cleaner. Keith encourages youth groups to get involved in the compost screening and spreading efforts. It's empowering for young people to learn that even a low-key version of composting is a worthwhile, effective effort. Congratulations to Keith for leading the way to greater sustainability in your cultural landscape!

## Employee Spotlight



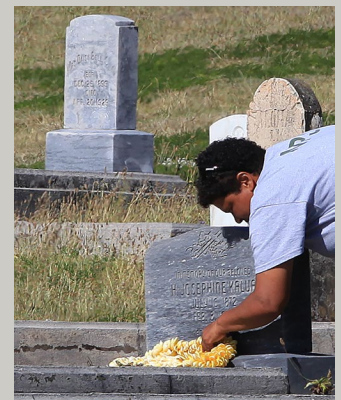
**Name:** Momi Hooper  
**Job Title:** Cultural Resource Laborer  
**Years with NPS:** 6 years  
**Hometown:** Kalamaula, Moloka'i

### ***Favorite Maintenance task:***

Grave marker repair and caring for historic trees.

### ***What is important to you about your cultural landscape:***

It's important to retain the integrity to preserve and protect the history and culture of Kalaupapa, to pass on to the next generation so Kalaupapa will never be forgotten.



*Momi Hooper maintains grave markers at KALA.*

## Pests & Diseases: Coconut Palm Heart Rot, A New Threat to Hawai'iian Cultural Landscapes



Coconut palms at The Place of Refuge, PUHA.

At Pu'ukohola Heiau on the leeward coast of the Big Island of Hawai'i, Coconut palms grace Pelekane, the Royal Courtyard that was home to Chief Kamehameha and his family.

Further south along the coast at Pu'uho'oua o Honaunau, Coconut palms shade the Place of Refuge from the hot sun (shown in photo).

At Kalaupapa on the island of Moloka'i, Coconut palms frame the gravesites of Kalawao Cemetery (see photo below) and shelter the settlement of the Hansen's disease colony.

The tree is actually non-native to the Hawaiian Islands, having been carried by the first Polynesian voyagers. But for Native Hawai'iians, the Coconut palm is a bridge to the ancestors and their original home. The tree was also a source of food, beverage, rope fiber, roofing and building material, fuel, and oil.

Now, Hawai'iian cultural landscapes are threatened with the loss of the Coconut palm due to Heart Rot, a relatively new and lethal disease. For hundreds of years, Coconut palms have lived free of the diseases that have plagued their counterparts closer to the equator, the native range of the species *Cocos nucifera*.

Various species of the fungus *Phytophthora* have killed millions of Coconut palms throughout the equatorial region, and now the species *Phytophthora katusurae* has been discovered in the Islands. The inter-island



Coconut palms at Kalawao Cemetery, KALA.



Coconut palm showing signs of infestation (University of Hawai'i). movement of nuts, seedlings, trees and tree-workers has unwittingly spread the disease from Kauai to the other islands. The disease is now found throughout the state, but is most prevalent in high-rainfall areas.

The fungus (see photo above) causes the following progression of symptoms:

- » Leaf discoloration
- » Wilting, collapse and death of young center-leaf
- » Drooping and dying of fronds
- » Abnormal bending of the tree
- » Defoliation
- » Stem-end rot on nuts, premature nut drop
- » Heart rot - the destruction of the growing tip of the tree
- » Death of the tree within a year of infection

The US Department of Agriculture and the University of Hawaii are exploring *Phytophthora katusurae* resistant cultivars of Coconut palm, and the use of compost to help diseased trees withstand infection.

Early experimental results indicate that compost boosts the populations of beneficial microbes in soil, which may be able to counteract the pathogenic fungus. As research continues, our best hope of protecting historic Coconut palms in NPS cultural landscapes is to adopt these best management practices:

1. Sanitize PPE, tools and equipment between work on successive trees.
2. Avoid tree work during wet weather, when fungal spores are most mobile.
3. Remove and destroy diseased plants at the first sign of infection by burning or burying.

Find out more information from the [USDA](#) or the [University of Hawai'i](#).

## Upcoming Training Opportunities

### **2017 Pacific Northwest Preservation Field School**

Fenn Ranger Station  
Nez Perce National Forest, ID

Session 1: Aug. 13–18

Preservation Primer

Session 2: Aug. 20–25

Materials Intensive

Session 3: Aug. 27–Sept. 1

Cultural Landscape Inventory

Session 4: Sept. 10–15

Preservation Primer

Register for any or all of the week-long sessions.

Visit [University of Oregon](#).

### **Vanishing Treasures**

Executing a Historic Preservation Project in Wilderness  
Death Valley National Park, October 17-10, 2017.

Creating and Using Oral Histories in the Preservation  
of Traditional Resources  
Grand Teton National Park, August 8-10, 2017.

[2017 Vanishing Treasures Course Catalog](#)

Contact:

[vanishingtreasures@nps.gov](mailto:vanishingtreasures@nps.gov)

307-739-3469

### **National Center for Preservation Technology and Training**

[Introduction to the Care of Historic Cemeteries](#)

Janesville, WI, September 23, 2017. \$35.

[Preserving African American Properties](#)

Online, July 20, 2017

### **National Preservation Institute**

[Landscape Preservation: An Introduction](#)

Tallahassee, FL, September 6-7, 2017.

[Landscape Preservation: Advanced Tools for Managing Change](#)

Tallahassee, FL, September 8, 2017.

## Seasonal Pruning Tip

Summer pruning of trees and shrubs should occur after new growth has stopped, usually late in the season.

Use summer pruning to:

- » Keep a plant's shape in bounds.
- » Reduce size and vigor, often of fruit trees.
- » Perform corrective pruning. This can be performed more easily when you can see how a branch has leafed out or is hanging under the weight of fruit.
- » Remove dead, diseased and damaged wood at any time of year. (Bonus: Deadwood is easier to see on deciduous tree in the summer.)

If you are pruning flowering shrubs, be aware of whether the genus blooms on old or new wood. For example, Viburnums and Forsythia bloom on old wood, so removing summer growth will result in fewer flowers next year. Pruning summer-flowering shrubs right after flowering will not affect next year's flowering. While summer is not the primary pruning season, work at this time can yield benefits to plant health and character.



*Loppers used to prune tree at JOMU.*

## Tool of the Moment: Reach Pruner



Size: Fixed-length and telescoping models, 4' to 10' long.

Use: Precision pruning in hard-to-access places

Function: Small cuts (similar in size to hand pruners) beyond your reach (see photo).

Some models allow the pruning blades to swivel up to 180° which can be used with a rotating shaft to line up the blade with almost any branch.

Once in position, the cut is made by squeezing the handle's lever.

Depending on the blade's sharpness and branch thickness, this can be accomplished with one hand while stabilizing the tool's shaft with the other hand.

The pruners are especially useful for tipping back or reducing branches up to 1/2" diameter, depending on the tool's specifications, and removing small watersprouts. Reach pruners are also useful for pruning the interior of large shrubs.



*A reach pruner is used to prune an overhead wisteria vine.*

## Plant Spotlight: Osage Orange



*The fruit of an Osage orange tree looks somethink like an orange.*

### ***Obsolete "Living Fence" Has a Place in Cultural Landscapes***

The remains of an [Osage Orange hedgerow](#) is still part of the cultural landscape of Homestead National Monument of America in southeast Nebraska, which tells the story of the Homestead Act of 1862 and its influence on westward expansion.

By the mid 19th-century, the native Osage Orange played a new role on Midwest prairies. Planted in rows, the Osage Orange tree could be trained into a living fence, enclosing land for farming and impenetrable to

cattle and browsing deer. The tree's long thorns and thicket of tangled branches created thousands of miles of hedgerows and windbreaks across the Great Plains, keeping animals out of crops and sheltering settlers from prevailing winds.

Native to the bottomlands of the Red River valley of southwest Arkansas, southeast Oklahoma, and northeast Texas, the Osage Orange is a deciduous tree related to the Mulberry. It can be pruned into a low-branched shrub or trained as a hedge, but unrestrained will reach 40-feet tall, as an irregularly shaped, but majestic tree.

For centuries, Osage Orange wood was crafted into archery bows and tool handles by Osage Indians and other native peoples due to its combination of high strength and flexibility. Homesteaders turned the wood into wagon wheels, and found that the wood

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*A row of Osage Orange trees once formed a hedge at MONO.*

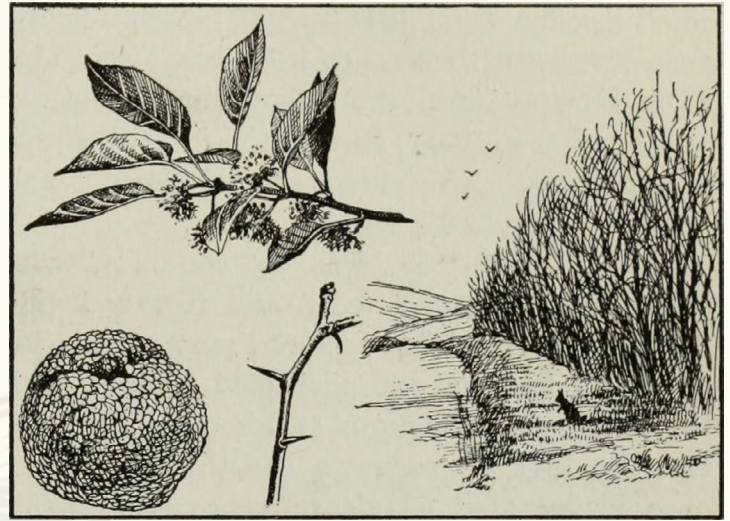
burned so hot that fewer logs were needed to heat the stove.

Hedging was performed by burying cuttings three feet apart in a trench. The first year's vertical growth would be bent sideways, horizontally weaving it across the tree to the left or right. The second year's vertical growth would emanate from the horizontal branches, and in turn would be bent sideways and woven into the adjacent trees. After three years, the hedgerow would be "Horse High, Bull Tough, and Hog Tight" (see drawing to right).

By the early 20th-century, the Osage Orange hedgerow was rapidly disappearing from agricultural landscapes, as it was replaced by barbed wire fencing.

Invented in 1867, barbed wire was a cheap fencing material more easily maintained than the Osage Orange hedgerow, which needed annual pruning. Osage Orange wood found a role as posts for barbed wire fencing, however. The rot-resistant wood could be directly buried in soil and persist for up to 100 years (more durable than barbed wire!).

Today the Osage Orange tree has naturalized throughout much of the Eastern United States, where it tolerates a variety of conditions, including wet and dry soils. While the distinctive orange bark, picturesque branching pattern, and grapefruit-sized fruits with edible seeds have gained the tree some popularity, the Osage Orange is rarely planted as a landscape



Fruit, foliage, thorns, and hedge of Osage Orange.

specimen. The unruly habit, thorns, and prolific fruit-drop are considered unfavorable, and its virtues often overlooked. While not related to citrus, the tree has citrus-fragrant blossoms and fruits with medicinal properties. The fruits serve as an insect repellent, and the tree boasts a rare combination of rapid growth rate and longevity.

While the Osage Orange won't be planted as a municipal street tree any time soon, it does have a significant role in cultural landscapes. The Osage Orange hedgerow, and the craft of hedging, evoke the distinctive qualities of place of the prairie homestead landscape.

## What's New

# field notes

The shared ideas of NPS cultural landscape specialists

## Path & Trail Surface Alternatives for Cultural Landscape Applications

NPS professionals working to preserve the historic character of unpaved circulation systems in cultural landscapes have long looked for design solutions to achieve stable and slip-resistant surfaces. In the last decade, the array of products for stabilizing unpaved surfaces or creating permeable but accessible routes has burgeoned. This document is intended to examine the array of products used by our NPS colleagues in cultural landscapes, and evaluate these experiences.

The products are organized into three sections: 1) Integral Stabilizers or products more commonly regarded as "soil stabilizers" that are mixed into the surface course of the circulation tread; 2) Surface Course Treatments for products applied as a topping upon a compacted base course; and 3) Traditional Solutions for the tried and trusted materials that may still have some advantages over the newer products.

In addition to product details, evaluations and links to manufacturer's websites, the document provides a summary ranking of the products and links to other resources on surfacing alternatives authored by other organizations. Please consider sharing your experiences with these and other path and trail surface alternatives for cultural landscapes with the NPS WASCO Park Cultural Landscapes Program.



Filterpave on ACAD's Ocean Path.

### INSIDE

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## Field Notes: A new resource for choosing pavement alternatives!

[Field Notes, "Path & Trail Surface Alternatives for Cultural Landscape Applications."](#)

Inside find:

- » product details & rankings
- » NPS staff experiences
- » links to compare products

This is the first issue in the Field Note series.

## Preservation Horticulture Training Materials

Materials from the May 2017 workshop, Preservation Horticulture: Maintaining Trees and Shrubs in Cultural Landscapes are available on the Common Learning Portal:

[Preservation Horticulture Webinars & Resources.](#)

Check them out!

## Preservation in Progress

In June, California Conservation Corps (CCC) members pruned and stabilized hundreds of olive trees on Santa Cruz Island in Channel Islands National Park.

Lonnie Maize, the park's arborist, supervised the work.

The CCC team worked in the historic Smuggler's Cove ranch unit's orchard in an effort to stabilize and improve the trees' condition and improve their structure following clear evidence of stress from the prolonged western drought. The Smuggler's Cove olive orchard is the largest olive orchard in the national park system, dating from the 1880s.



*View of the olive orchards at Smuggler's Cove, CHIS.*



*Dead wood is removed to stabilize the condition of the Olive Trees at CHIS.*