

GROWERTALKS

Features

10/28/2016

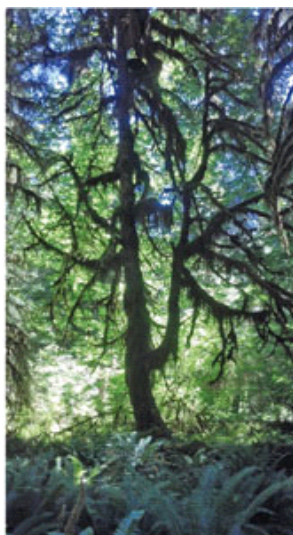
Keeping Our Parks Planted

Christopher J. Currey

Fall is underway and winter is fast approaching. Memories of summer are starting to fade. Hopefully, you were able to take some time to relax and enjoy your summer. One of the most iconic ways to enjoy summer is to pile into a car (or plane, perhaps) filled with camping gear and head out to our national parks for some adventure. However, this year is a little different for our parks—it's a celebration!

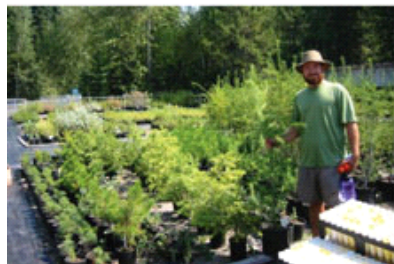
The National Park Service is celebrating its centennial this year—100 years old. Some of our parks are older than that. For example, Yellowstone National Park was established in 1872, while Hot Springs National Park was originally set aside as a reservation by Congress in 1832 (becoming a national park in 1921). However, we're not celebrating the birthday of any singular park or location; we're celebrating the passage of the National Organic Act.

When it was passed in 1916, the National Organic Act established the National Park System, unifying individual properties that had been designated as national parks. Ken Burns called it "America's best idea." Historian Dayton Duncan has said it's our second best idea following the Constitution. First or second place, let's not split hairs. Indeed, the national parks are arguably one of our country's most important contributions to the world.



Clockwise from top left: Volunteers cleaning seed at Glacier National Park.

• The Hoh Rainforest, which is the largest temperate rainforest in the U.S., at Olympic National Park. • The author with a Western Larch in the nursery at Glacier National Park.



One of the reasons the U.S. national parks are so profound is that they were the first example of setting aside tracts of scenic wonders and natural beauty for preservation and public enjoyment. This was a stark change from the European tradition of wild lands being owned by royalty and aristocrats.

Our parks are meant to be preserved and accessible to everybody. The National Organic Act charges the

Park Service to “... conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

And herein lay the central challenges our national parks face: How to promote visitation and accessibility while preserving the environment? Millions of visitors, domestic and international, visit our national parks every year to find excitement, solitude, relaxation—you name it. The parks mean different things for everybody.

However, millions of visitors in the parks can impact the environment. Sometimes you'll hear that we're “loving our parks to death.” Construction on roads and trails, as well as in campsites and around popular attractions, all disturb the landscape. “Social” or unofficial trails are often blazed by park goers to make access to something more convenient. How can we promote and encourage visitation in the parks without degrading our scenery? As a response to this challenge, the national parks have extensive revegetation and restoration efforts.

Greenhouses in the park

National parks commonly work with other governmental partners, such as the Natural Resource Conservation Service (NRCS), to contract out production of containerized plants or seed to be used in the parks. However, there are a number of national parks that have constructed greenhouses and nurseries to produce native plants for use inside parks. Some of the parks that have greenhouses include Joshua Tree, Glacier, Olympic, North Cascades, Mount Rainier and Voyageurs National Park, to name a few.

The rationale for constructing greenhouses in national parks varies across facilities. For example, the Olympic National Park has the Matt Albright Native Plant Center, where their greenhouse and nursery is housed. The construction of the facility was primarily to facilitate the restoration of the Elwah River following the removal of the Elwah Dam. Alternatively, Glacier National Park's greenhouse has its origins in federal highways funding for restoring roadside construction sites on the historic and world famous Going-to-the-Sun Road.

The greenhouse facilities at parks are often very small and don't match the scale of many small-to-modest commercial producers. However, these facilities play important roles that would be hard for any commercial nurseries to perform. Seeds and cuttings are collected within the parks and are used to propagate plants that will be used for revegetation. However, with ample planning, plant materials can be collected from the exact site where they'll eventually be planted. All this is done to maintain the integrity of plant genetics inside the park, ensuring that those plants used inside the park preserve the unique genetic pool.

Targeting the proper plants

One thing we're very familiar with in greenhouse crop production is plant specifications. A great example would be poinsettias—common requirements are that plants be between 14 and 16 in. with five to seven “flowers” (or branches).

A similar, but more extensive, specification system is commonly used in revegetation, restoration and reforestation. They call it Target Plant Material Concept and it is applied to plant production for restoration

and revegetation in national parks. The Target Plant Concept considers: 1) reforestation or restoration objectives; 2) site evaluation; 3) limiting factors; 4) mitigating measures; 5) genetics; 6) plant materials; 7) outplanting tools and techniques; and 8) outplanting windows. When these factors are taken together, plants can be grown that will be most well-suited for survival in unmaintained landscapes and environments.

Target Plant Materials that are produced vary widely from park-to-park, as well as site-to-site within a park. Perhaps herein lies part of the allure of producing plants at different parks—think of all of the challenges and opportunities that lie in producing plants for the variety of landscapes we have. Let's look at a few examples.

One of the most popular attractions at Glacier National Park is Logan Pass, a mountain pass at 6,647 ft. above sea level that provides visitors with the easiest access to alpine ecosystems in the park. To protect the fragile alpine ecosystem from visitors, boardwalks and sideways are constructed and maintained to keep people from stepping on plant life. With enough advanced planning, staff were able to go up to Logan Pass and collect fragments of the alpine vegetation in mats, akin to turf sod, from sites where construction was being slated to occur. These were then brought back, planted in specially designed large wooden flats, then grown on until construction was finished and revegetation could begin. Instead of trying to transplant individual plants with the hopes these slow-growing plants established, the alpine sod mats were transplanted, providing much more rapid vegetation establishment to the site.

For contrast, let's move from the mountains down in the desert. Consider Joshua Tree National Park, spanning the Colorado and Mojave Deserts. Clearly, one of the most limiting factors is moisture—whether soil moisture or precipitation. Some of the plants that are produced aren't grown in regular plastic greenhouse or nursery containers; rather, they're produced in large PVC tubes. This method allows them to develop root systems several feet long that help increase chances of survival following transplanting by providing access to soil with more moisture available for uptake.

While we consider the national parks wild places that allow us the opportunity to discover the heritage of this country and revel in its wild spaces, the fact that there are greenhouse facilities in some of our national parks brings me great joy. I think it comes from the fact that greenhouses are my first professional love and the outdoors is one of my personal passions. To see greenhouses—those tools that we're using every day to grow beautiful flowers and nutritious produce—utilized in our parks to produce plants that are used to restore the integrity to some of our national treasures simply brings me joy. The next time you have the opportunity to find yourself on the trails or a scenic overlook at a national park, just think somewhere close by may be a greenhouse producing those plants by your feet or in your vista. **GT**

Christopher J. Currey (ccurrey@iastate.edu) is an Assistant Professor of Horticulture specializing in greenhouse and controlled-environment crop production.