



Oregon State University
Extension Service
Marion County

Facing New Challenges for Establishing Forest Trees

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Thousands of acres of family forest that burned in 2020 are in need of reforestation

People who want to plant forest trees for reforestation, restoration, or other purposes are facing extraordinary challenges lately. Forest tree nurseries grew about 135 million trees for Oregon and Washington in 2019. This was enough to plant about 386,000 acres of forest. While this seems like a lot, the wildfires over the last two years created a big increase in demand for seedlings and reforestation services, so there is now a shortage of both. In Oregon, estimates are about 360,000 acres of the area burned in 2020 will need to be replanted

with about 100 million seedlings in over the next few years. And with more than 800,000 acres burned in 2021, there will be another large area in need of planting.

This situation is especially difficult for family forest owners (non-industrial private owners) who collectively own and manage about 3.7 million acres of Oregon's forests. Even before the 2020-2021 fires, there were problems supplying tree seedlings for family forest owners due to the unpredictability of demand and the need to order seedlings far in advance. The standard advice for people ordering forest tree seedlings is to order 1 to 2 years in advance. But for many forest owners, the need for tree seedlings is driven by unforeseen events (fire, wind, ice storms, etc.) or short-term market opportunities.

Ensuring adequate supplies of seedlings for family forest owners often requires larger bulk orders. Most of the larger forest tree nurseries don't take orders for less than

10,000 trees seedlings at a time. OSU Extension, Oregon Department of Forestry, Oregon Small Woodlands Association, Watershed Councils, and other local partners are working together to address the situation. This includes improved estimates of seedling needs, aggregating small landowner orders to make bulk orders, and reaching out to tree nurseries and forestry service providers to expand capacity. But it will take a few years to deal with the backlog in seedling production, planting, and maintenance.



Increased capacity of forest seedling nurseries is needed to meet the demand for planting burned areas

Millions of dollars are coming from a variety of local, state, federal and non-profit organizations who are providing grants, incentives, and donated seedlings. Local working groups have formed across Oregon to help landowners with planting plans, seedling orders, site preparation, planting, and maintenance. In Marion County, partners include OSU Extension, North Santiam Watershed Council, Oregon Department of Forestry, Marion Soil and Water Conservation District, Santiam Canyon Wildfire Relief Fund, and various USDA agencies. Just for the Beachie Creek and Lionshead fire area, about 100 landowners will be receiving assistance to plant about 200,000 seedlings in 2022, with many more lining up for future years.

Heat, drought, and other stress hazards to seedling establishment

In addition to the problems with seedling supplies and services, harsh environmental conditions have also been a challenge for establishing new trees. The 2021 growing season was very hard on tree seedlings due to heat, drought, and planting-quality issues. Careful execution of the entire sequence of steps for seedling establishment becomes even more important under these stressful weather conditions. Seedlings that have been compromised at any step of the way – at the nursery, shipping and handling, storage, planting, and maintenance – will likely suffer or die during extreme conditions such as we experienced in 2021. Decades of research and operational trials have helped improve success of forest regeneration under the hot dry conditions in southern Oregon and California. Lessons learned in these regions can be applied here in northwest Oregon to improve survival under more extreme heat and drought.

Recommended practices include:

- Extra attention to protecting seedlings with shade, behind stumps or slash, or with artificial tree shades.
- Aggressive weed control to conserve soil moisture for new tree seedlings.
- Mulching or retaining dead shade of competing vegetation (killed by control treatments).
- Planting species mixtures that include more heat and drought tolerant choices.
- Matching both species and type of seedlings to local soil and site conditions.



Planting seedlings in the shade can improve seedling survival during summer heat

If you or someone you know is looking for help with establishing new forest trees, contact your OSU Extension Forester, Glenn Ahrens at 503-655-8631

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To keep current on woodland issues in Marion County, sign up for Glenn's *Woodland Notes Newsletter* at <https://extension.oregonstate.edu/newsletter/woodland-notes-newsletter>

OSU Extension Forestry offers programs and educational materials about Christmas tree production, cutting and selling trees, fire prevention and recovery, forest health and management, non-timber products, tree care and wood processing and products at <https://extension.oregonstate.edu/forests>