POST-FIRE REVEGETATION OVERVIEW

How does vegetation recover after wildfires?

- Little mortality and rapid recovery after low severity fire
- Grasses, forbs, shrubs, hardwood trees generally return on their own, even after severe fire that kills most of the trees. Hardwood trees and shrubs are typically top-killed and re-sprout; some perennial grasses and forbs regenerate from underground parts; other vegetation comes in from seed. Also some from seed stored in the soil.
- Conifers regeneration tends to be variable – from none to abundant.
- Longer timeframes for conifer tree establishment compared to planting
- This image shows a burned area 10 years after fire. Lots of hardwoods and grass, few conifers.

What about natural regeneration of conifers?

Depends on proximity of seed trees – most seed falls within 1-2 tree heights of seed tree. Also depends on timing of good seed crops, receptive seed bed (post fire mineral soil seedbed is good for most conifers), freedom from excessive brush and other vegetative composition. All these factors must align for good natural regeneration. In practice, can be spotty – from abundant to none.

What are basic options for post-fire reforestation?

Let nature take its course – no active management.

- Vegetation will come back…but maybe not the vegetation you want
- Habitat, diversity objectives
- Good for remote sites, poor access
- No reforestation requirement, but possible property tax implications

Encourage natural regeneration/interplanting

- Good for mixed or multiple objectives, e.g., habitat, timber
- Suitable for moderate severity, smaller high severity patches
- Not a "do nothing" option – must manage seedbed & competing vegetation
- Longer timeframes for conifer establishment, less reliable
- Interplant where regeneration is inadequate
- Alternate reforestation plan required if salvaging

Replant with or without salvage

- Can plant without salvage (may require site prep) or after salvage
- Good for mixed or multiple objectives, e.g., habitat, timber
- Reforestation legally required after salvage
- Moderate to high severity burns
- Compared to passive or natural regeneration, this option has shorter timeframes for conifer establishment, more control over composition, genetics, more reliable, also higher costs

KEYS TO REFORESTATION SUCCESS AFTER FIRE

Anyone faced with the need to plant forest trees (after fire or otherwise) should become familiar the basic steps for successful reforestation, covered in the following Extension publications:

- Successful Reforestation: An Overview: https://catalog.extension.oregonstate.edu/ec1498
- Selecting and Buying Quality Tree Seedlings: https://catalog.extension.oregonstate.edu/ec1196
- Sources of Forest Tree Nursery Seedlings: https://www.oregon.gov/odf/Documents/workingforests/seedling-catalog.pdf

If you don't have access to these on the internet, contact your local OSU Extension office to order paper copies of these publications.

Plan ahead?!

Planning ahead is key to success, so with the unexpected event of wildfire, it is important to start as soon as possible. The first step is to assess the fire damage across your property, identify specific areas where you wish to plant trees, and estimate the acreage of those areas. The basic steps are:

- Assess reforestation need in burned areas
- Seek Disaster-related assistance where needed
- Match species & seedling type to site conditions
- Order seedlings as soon as you know what you need - anticipate delays due to availability
- Prepare the site – anticipate timing and delays
- Handle and plant seedlings properly
- Control competing vegetation
- Monitor animal damage

Know your land

Getting to know your land is key to evaluating your planting environment and selecting suitable tree species and genetic types within species. This involves looking at:

- Soils and soil maps (available from the NRCS)
- Topographic features and microsites
- Vegetation types and clues – species indicate soil & site conditions
- Full sun or shady
- Known areas of disease and insect hazards
- Wildlife damage hazards

Use an appropriate seed source

Note that for a given tree species, it is essential to use an appropriate *seed source* to ensure that seedlings are from parent trees adapted to local conditions. For this, refer to geographic and elevational *seed zones* for Oregon. For more on matching species, seed zones, and seedling types to your planting environment, refer to the publication *Selecting and Buying Quality Tree Seedlings* https://catalog.extension.oregonstate.edu/ec1196

A further consideration in selecting the seed source is the risk of climate change. Forest genetics researchers have concluded that current populations (of trees) are expected to be poorly adapted to future climates. Trees adapted to future climate may be found at lower elevations or further south than current seed zones. People may consider using mixtures of seed sources to account for uncertainty and climate change over the

life of a stand (assisted migration). However, there is no clear guidance for this yet. Look for "climate-based seed zones" to be developed over the next few years.

Avoid common problems

Proper attention to planning and implementing all key steps will help you avoid the most common causes of reforestation failure, including:

- Poor site preparation
- Unsuitable or poor quality planting stock
- Improper storage, handling, and planting
- Competition for water and light by surrounding vegetation
- Animal damage

For many landowners, **the timeframe for active reforestation is likely to be delayed** beyond the normal 1-2 year period for planting after timber harvest. Due to the large area burned in Oregon, we expect that the demand for tree seedlings and planting contractors will be much higher than available supply. **Unless you already have contractors and seedlings secured, it could be 2-5 years before you will be able to get seedlings and tree planters.** You can use the extra time to: seek assistance, assess your situation, observe natural recovery/regeneration, and plan your actions.

For further assistance with any of the key steps, contact your local offices for OSU Extension and Oregon Department of Forestry.