

## 2016 Eastern Oregon Area Reforestation Guidance for after Fire Salvage.

The Eastern Oregon Area reforestation guidance for after fire salvage evaluates land for stand reestablishment, explains reforestation standards, including the reasonable reforestation effort for areas with a high probability of success, and reviews documentation for future policy and rule development. The guidance updates the 2013 “Eastern Oregon Area-Minimal Site Reforestation Guidelines for Fire Salvage” based on input from foresters in the Eastern Oregon Area districts, OSU forestry extension, and Salem staff. The guidance gives stewardship foresters discretion to: 1) identify areas with low probability of reforestation success using reasonable reforestation efforts and 2) identify areas with high probability of reforestation success, at full and lower tree stocking standards, using reasonable reforestation efforts. Low probability areas could include some Site Class VI lands under certain conditions that would likely have reforestation failure, using reasonable standards for lower stocking, extended time, and reasonable efforts. Guidance recognizes this is outside of current rules and explains why ODF will allow it.

**Background:** The Forest Practice Act reforestation rules assure continuous growing and harvesting of trees, in consideration of the landowner objectives and consistent with sound management of timber and other forest resources. The reforestation rules are triggered when post-harvest stocking is below stocking standards for land capable of producing at least 20 cubic feet per acre per year at culmination of mean annual increment. The rules are outcome based, but provide flexibility in the method, stocking level, and timing for stand reestablishment.

Since the late 1990’s, applying the FPA reforestation rules in eastern Oregon after fire salvage has been challenging for both forest landowners and stewardship foresters, especially on the marginally productive land, as known as transitional land. *Transitional land means the land between the grassland / sagebrush / juniper / mountain mahogany ground in the lower elevations, especially on south & west aspects, and the forest ground fully stocked with ponderosa pine or mixed conifer on up to the upland, especially on north and east aspects.* Repeated reforestation failures on transitional land by all forest landowner types can be traced to the merging of several constraints: unrealistic expectations for marginally productive soils, south and west aspects, vegetation competition, fire suppression, management practices, extended dry-growing seasons, and severe wildfires damaging the soil organic layer.

The reforestation rules do not allow waiver of the reforestation requirement for Site Class VI land that cannot reasonably meet the fully stocked or lower tree stocking standard, where there is a low probability of reforestation success. The outcome based rules provide an extension of time to reforest when circumstances are beyond the landowner’s control or as approved under a plan for an alternate practice, but the rules do not define when the landowner has met the reasonable reforestation effort.

**Objective: to answer the following questions about reforestation after fire salvage in eastern Oregon:**

- How is land determined to have a high or low probability for reforestation success after fire salvage?
- What are the reforestation standards after fire salvage for areas with a high probability for success?
- How is a reforestation plan for an alternate practice approved and evaluated?
- What should be documented to inform future policy and rule development?

**How is land determined to have a high or low probability for reforestation success after fire salvage?**

The stewardship forester has discretion to determine where stand reestablishment has a high and low probability of success, based on the evaluation of soils, plant associations, other environmental considerations, and local reforestation experiences. In some cases, Site Class VI land may not be commercially viable for growing and harvesting forest trees, because of combined factors of, likely soil organic layer

damaged from intense fires, shallow/rocky soils, south-west aspect, and past reforestation failure in similar conditions.

**Soils:** Where available, review the USDA Web Soil Survey information about damage to soils by fire and the forestland productivity by site index. Stratify out operational areas not capable of producing at least 20 cubic feet per acre per year at the culmination of mean annual increment or better. If soils types are highly intermingled, expect tree stocking at the level corresponding to the predominant productivity range present. Consider measuring heights and ages of several dominant or codominant site trees to determine site class, for example, ponderosa pine site trees at 100 years would range from 64 to 108 feet tall for Site Class IV and V and 40 to 63 feet tall for Site Class VI.

**Plant Associations:** Past selective logging, aggressive fire control, and livestock management have complicated identifying and understanding the natural plant communities. Combine site observations of vegetation on adjacent lands, trees species and size in the unit, landowner's vegetation management practices, and fire history with plant association guides and other information. USDA Forest Service plant association guides may be more accurate than Web Soil Survey, but generally don't address low elevation private land ownership.

Adjacent or nearby undisturbed areas should be used as reference areas for determining plant community type. Some guides address site productivity, describing tree commercial value or if aspect will make it marginal to noncommercial. Productive sites may have dominant overstory conifer species and several age classes in the stand. A productive site may have a wide variety of ground cover and even western juniper in the understory. A low productive site may have conifer regeneration, but no intermediate age classes and only occasional mature trees.

Find the USDA plant association guides by web search or link, <http://ecoshare.info/?s=plant+associations>:

- [Plant Communities of the Blue Mountains in Eastern Oregon and SE Washington R6 Area Guide 3-1](#)
- [Major Indicator Shrubs and Herbs on National Forests of Eastern Oregon, R6-TM-190-1985](#) (photo guide)
- [Forested Plant Associations of the Oregon East Cascades, R6-NR-ECOL-TP-03-2007](#)
- [Plant Associations of the Blue and Ochoco Mountains, R6-ERW-TP-036-92](#)
- [Plant Associations of South Chiloquin and Klamath Ranger Districts, R6-Ecol-79-005](#)

Example:

Plant Associations of the Blue and Ochoco Mountains, R6-ERW-TP-036-92

*Ponderosa pine/bluebunch wheatgrass, CPG1-11: Site class VII;* Ponderosa pine forms an open, park-like savannah with bunchgrass and minor component of western juniper. Shrubs are infrequent. Usually unsuited for timber production due to severity of sites to adequately regenerate.

**Other Environmental Considerations:** Expect a lower probability of stand reestablishment where areas are impacted by: longer growing seasons with lower rainfall and higher temperatures; south and west aspects; management practices that caused soil erosion or western juniper occupation; and moderate to severe wildfires that likely damaged the soil organic layer and seed trees. Absence of tree stumps may indicate that stumps were completely consumed by past fires or that historically, trees did not occupy these areas and fire suppression activities of the past 80+ years have allowed encroachment down onto these sites.

**Local Knowledge:** Evaluate nearby historic reforestation efforts on transitional land after fire salvage to duplicate successes and avoid failures with low probability of reforestation success. Consult with local industrial foresters, OSU extension foresters and current/former stewardship foresters to interpret site productivity, reforestation difficulties, and narrow the decision where to focus stand reestablishment. For example, Klamath-Lake District local experience, as stated in the 2013 guidelines: "Generally, rocky (stony)

ground can be planted, and if these areas are in an area that was primarily ponderosa pine they will be included in the area to be planted.”

### What are the reforestation standards after fire salvage for areas with a high probability for success?

When Site Class VI is not capable of being fully stocked, the stewardship forester has discretion under this guidance to approve a plan for an alternate practice that identifies a lower tree stocking level, extend time for stand reestablishment, and appropriate practices for the landowner to meet the reasonable reforestation effort. The plan for an alternate practice should be validated by another stewardship forester or supervisor. Reforestation is not required for Site Class VI determined to have a low probability of reforestation success, even though there is a lower stocking level and extended time frame.

**Planning:** Prior to harvest, identify scattered healthy green trees of various species to retain as a seed source. Consider creating micro-sites for germinated and planted seedlings by retaining scattered standing unmerchantable tree, contour felling of unmerchantable trees, or felling trees to leave high stumps.

**Tree Stocking:** Determine if natural reforestation is appropriate, based on the availability of seed sources in scattered healthy trees in harvest unit and adjacent stands or in the seed bank of the organic layer. Conifer tree cone crops are cyclical, for example, ponderosa pine cone crops occur every 7 – 10 years. Estimate the number of tree seedlings that can reasonably germinate and be present after a few years and the minimum number of seedlings to establish a free-to-grow stand.

**Time:** The time for stand reestablishment should address an evaluation date for the presence of seedlings a few years after natural germination and an evaluation date for establishment of a free-to-grow stand. Each evaluation date provides the landowner feedback on the plan’s success or need for a plan amendment. For example: Klamath-Lake District believes 15 years is an adequate amount of time to meet a free-to-grow status as described in defined OAR 629-600-0100(29). At 10 years there should be an adequate presence of seedlings to indicate natural reforestation will be successful.

**Reasonable Reforestation Effort:** The reasonable reforestation effort are appropriate practices to reestablish a stand used by similar forest landowners in the area and validated by another stewardship forester or supervisor. Appropriate practices include the initial reforestation effort to establish the seedling presence after a few years and a follow-up effort to establish a free-to-grow stand, such as inter-planting. The well-defined reasonable effort should consider site preparation, animal protection, and vegetation management. Though evaluating the reasonable effort can be subjective, the concept is repeatedly used in the FPA reforestation rules and the 2009 reforestation guidance:

- See FPA reforestation rules: OAR 629-600-0100(29) “Free to grow” definition; OAR 629-610-0040(7) consideration for extension of time; and OAR 629-610-0090(3) evaluation of a change in land use.
- See 2009 reforestation guidance: OAR 629-610-0020(9) determining tree stocking compliance; OAR 629-610-0040(5) consideration of a plan for alternate practice; OAR 629-610-0040(7) consideration for extension of time; OAR 629-610-0040(8) evaluation of the reforestation effort; and OAR 629-610-0090(3) evaluation of a change in land use.

### How is a reforestation plan for an alternate practice approved and evaluated?

The FPA reforestation rules allow the stewardship forester to approve a plan for an alternate practice using natural reforestation or setting a lower the tree stocking level and extended time for stand reestablishment, where there is a high probability to assure continuous growing and harvesting of forest tree species, OAR 629-

610-0000(1), 629-610-0020(10), and 629-610-0030. This guidance adds the requirement of a well-defined reasonable reforestation effort to the plan for an alternate practice. The rules do not authorize approval of a plan for an alternate practice for areas determined to have a low probability of reforestation success, even though there is a lower tree stocking level and extended time frame.

**Coordination:** Determine the landowner’s objectives for the harvested land and explain the reforestation requirements. Advise the landowner in developing and implementing the plan for an alternate practice.

**Approval:** The reforestation plan for an alternate practice for areas with a high probability of reforestation success is approved by the local stewardship forester, in consultation with another experienced forester. Include in the plan, follow-up actions to take after the initial reforestation effort. Also include a statement in the plan that after meeting the reasonable effort, the landowner is encouraged but not required to make any additional effort to establish a new stand. A new landowner may choose to continue the reforestation plan or seek approval for an amended reforestation plan.

**Evaluation:** Evaluate tree stocking levels at the date for the presence of seedlings and the date for establishment of a free-to-grow stand. If the initial reforestation effort fails, determine appropriate practices for reforestation success. Review with the Forest Practices Field Coordinator if the reasonable efforts fails to establish a free-to-grow stand.

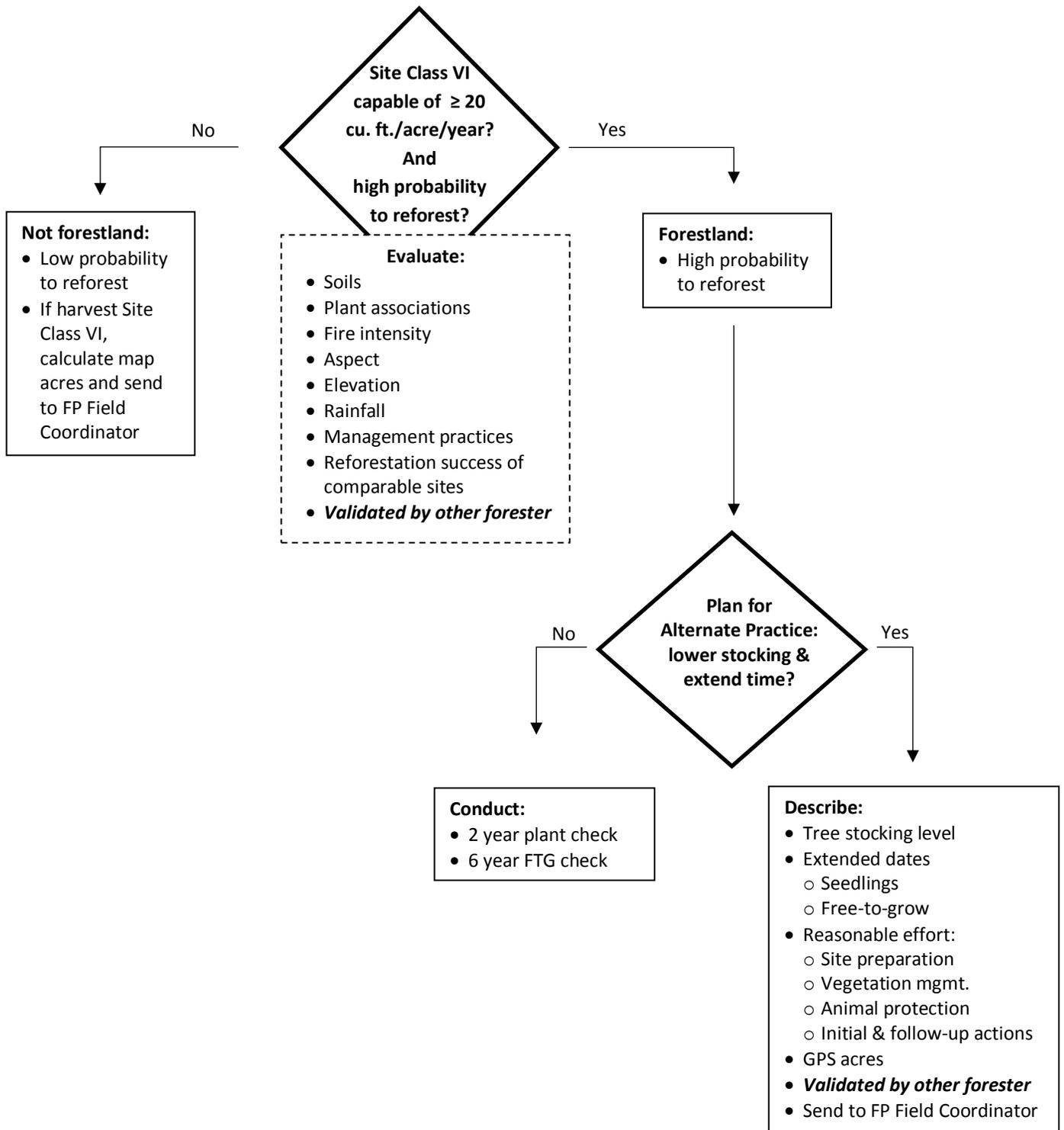
**Enforcement:** If the reforestation plan fails stand reestablishment, the district should review the landowner’s reasonable effort to determine the level of enforcement action, OAR 629-670-0130(1). When the landowner has made the reasonable effort and the land fails reforestation, ODF should not hold the land for FPA reforestation. ODF should inform the county assessor that the harvested land failed stand reestablishment under an ODF reforestation plan, but it is not being held for reforestation and is not in violation of the FPA.

#### What should be documented to inform future policy and rule development?

To assist future policy and rule development, document the following and send to the Forest Practices Field Coordinator:

- Harvested acres that are Site Class VI but won’t require reforestation. Calculate acres by map area.
- Harvested acres requiring reforestation at a lower stocking level under an approved plan for an alternate practice. Calculate acres by GPS.
- Plan for alternate practices,
  - Tree stocking level,
  - Date for seedling presence a few years after germination,
  - Date for establishment of a free-to-grow stand,
  - Appropriate practices to meet the reasonable effort, and
  - Field notes and map identifying the harvested site evaluation areas.
- Failed reforestation acres, after the reasonable reforestation effort. Calculate acres by GPS.

**Reforestation after fire salvage:  
Determining probability of reforestation success and reforestation standards**



## Field Notes: Site Evaluation and Reforestation Standards

<b>Attach a map with the identified site evaluation area</b> (identify by soil type, plant association, aspect, feature, topography, or other)	<b>Name: Site evaluation area</b>
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**Site evaluation area** (ideally done before salvage harvest)

Harvested Land		Description	Comments
SC VII <sup>1</sup> Map acres	SC VI <sup>2</sup>		
		Web soil survey	
		Dominant site trees: height and age	
		Plant association guide	
		Adjacent land vegetation type	
		Overstory species and cover %	
		Forest stand age classes	
		Tree dbh & heights	
		Tree merchantability	
		Understory species and cover %	
		Fire intensity impact on organic soil	
		Management practices: soil erosion	
		Management practices: vegetation	
		Reforestation success: comparable sites	

**Reforestation standards for stand reestablishment for the site evaluation area**

SC VI 100 TPA	SC VI <100 TPA GPS Acres	Description	Comments
		Reforestation success: comparable sites	
		Green-healthy seed trees	
		Reasonable effort: site preparation	
		Reasonable effort: vegetation control	
		Reasonable effort: animal protection	
		Minimum seedlings per acre	
		Date for minimum seedlings per acre	
		Reasonable effort: inter-planting	
		Date to reach free-to-grow stand	

**Forester Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Forester Name:** \_\_\_\_\_ **Date:** \_\_\_\_\_

SC VII<sup>1</sup> = Site Class VII is not forestland.  
 SC VI<sup>2</sup> = Site Class VI is capable of producing between 20 and 49 cubic feet per acre per year at culmination of mean annual increment.