

Reforestation after a fire on Private Lands



Field Level Circumstances & Challenges

- * Typical circumstances are unfortunate, unplanned, and immediate.
- Demands an immediate, reactionary response coinciding with a demand on available resources.
- Environmental considerations and opportunities.
- What level of planning and technical assistance do I need?

Identify Landowner Objectives and Constraints

- 1) ID Objectives (every site is different)
- 2) Translate Objectives into Stand/ Landscape Structure
- 3) Evaluate Effects of Site Quality
Influences rate of stand development
- 4) Evaluate Constraints
Ecological, managerial, economic, social

One Size does not fit all

Post fire landscapes are dynamic and different

Fire Severity	Post-fire condition	Potential Mechanism
Low Severity	Little reduction in stocking or change in forest structure	No Reforestation Need
Moderate Severity	Moderate or variable reduction in stocking, but variable survival of overstory seed trees of desired species	Site preparation for natural regen., or certification of natural regen.
High Severity	Near to complete mortality of trees, little to no seed source	Active reforestation techniques such as site prep, planting, release, etc.

Sequence of events

*Salvage

* Mitigation

* Stagnant

- 1 Timing, timing, timing
 - 1 Length of Planning & Length of Operations
 - 2 Will Salvage Operations be complete prior to planting season?
- 2 Post-salvage environment
 - 1 Treatment of slash
 - 2 Treatment of sub-merchantable material
 - 3 Is there a need for site prep?
- 3 Coordination is critical



Considerations for Planning and Implementing Post-fire Reforestation: **Site Quality**



Photo credit: Plumas NF staff

- Depending on size, scale, or timelines, site quality may serve as a consideration in terms of prioritization of sites for timely reforestation and balancing risk and return of reforestation investment.
 - Higher quality sites tend towards higher returns in terms of survival and growth
 - Lower quality sites may have inherently more risk
 - In some cases, the lowest quality sites may be appropriate for natural recovery

Considerations for Planning and Implementing Post-fire Reforestation: Available Moisture, Seasonality, Access



Photo credit: Plumas NF staff

- ❑ Available Moisture
 - ❑ Want to be close to field capacity for root growth capacity
- ❑ Seasonality
 - ❑ Fall vs. Spring Plant
 - ❑ Variable planting windows
 - ❑ Variable weather and Starts/Stops
- ❑ Access
 - ❑ Snow plowing
 - ❑ Walk-in units?

Considerations for Planning and Implementing Post-fire Reforestation: Site Preparation and Re-burn Potential



- ❑ "Inhospitable" fuel environments
- ❑ Balance between effective soil cover, long term fuel loads, and large woody retention

Considerations for Planning and Implementing Post-fire Reforestation: **Competing Vegetation & follow-up TSI**



Example: First Year Post-Fire

- First year Post-fire Planting
 - High severity areas
 - No salvage proposed
 - No site prep
- Cluster and conventional spaced planting
 - Lower Density Planting
 - Multiple Species
 - Container Stock
- Manual grub release



Photo credit: Pumas NF staff

Example: Five Years Later – Fuel Dynamics



Example: 2000 Storrie Fire and 2012 Chips Fire – Re-burn

2011 – Post 2000 Storrie Fire



2012 – Post 2012 Chips Fire



Hw to obtain seedlings?



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