

Lomakatsi Restoration Project

Boulder Stewardship Demonstration Project- September, 2006

Executive Summary

For the purposes of the Boulder Stewardship Demonstration Project, Lomakatsi Restoration Project will be the primary contractor organization, collaborating with the Umpqua USDA Forest Service under a Participating Agreement. Lomakatsi will be working in partnership with local timber workers from the Tiller community, subcontractors Jack Leroy of Summit Wood Products and Don Hammond Inc.

We feel this collaboration which involves local workers, two timber operator outfits and a local community -based restoration forestry contracting organization, is not only capable of exceeding all standards on project performance, but will also provide an excellent opportunity for the local community to involve itself in the Stewardship process.

To fulfill the end result objectives of the Boulder Stewardship Demonstration Project, Lomakatsi will combine restoration forestry practices that will integrate eco-system based knowledge with silvicultural prescriptions, incorporating low impact tree harvesting systems, while utilizing and providing small diameter trees to the local forest economy. We are confident we can achieve a successful outcome for this project that involves local community participation, employs the local workforce and accomplishes fuels reduction and forest enhancement objectives outlined in the Boulder –Dumont Vegetation Management Project *Environmental Assessment*.

Late Successional Reserve Land Allocations

LSRs are specially designated areas legally set-aside by the Northwest Forest Plan for the protection of the northern spotted owl and other species dependent on old-growth forests. The only activities allowed are those, which would improve the quality of late successional habitat and reduce fire hazards – goals similar to those of Lomakatsi’s ecological restoration program.

Silvicultural Objectives & Desired Ecological Outcomes

For Restoring LSR Characteristics Within Unit 7 of the

Boulder Stewardship Demonstration Project Area

In an effort to meet the future desired outcomes for restoring late successional forest conditions and characteristics within the Boulder Creek Watershed of the South Cascade LSR, Lomakatsi will prescribe a *Variable Density Thinning* treatment prescription.

As stated in the **Boulder- Dumont Vegetation Management Project** *Environmental Assessment*:

Objectives: This project lies within the Late Successional Reserve allocation.

Goals of the harvest of these stands is to develop late successional characteristics:

These goals will be accomplished by:

- Creating and maintaining variable or uneven spacing, with clumps of trees and canopy gaps.
- Maintain the largest trees of the stand.
- Reduce the density of ingrowth.
- Maintain early seral species (pines and tree form hardwoods) on the landscape and reduce the fuel loading for the landscape by removing ladder fuels.

Proposed *Variable Density Thinning* treatments will achieve the silvicultural outcomes defined by the Tiller Ranger District, Umpqua National Forest, through designation by description.

Variable-Density Thinning to Create Structural Heterogeneity

“ Variable-density thinning regimes in which thinning intensity and tree marking rules are varied within the stand of interest (Carey and Johnson 1995; Carey and Curtis 1996) are a useful approach to increasing heterogeneity in stand density and canopy cover. Variable-density thinning is sometimes referred to as “skips and gaps” approach. In such a prescription, some portions of a stand are left lightly or completely unthinned (“skips”) providing areas with high stem density, heavy shade and freedom from disturbance while other parts of the stand are heavily harvested (“gaps”), including removal of some dominant trees providing more light for subdominant trees and understory plants (Carey et al. 1996). Intermediate levels of thinning are also applied in a typical variable-density prescription.”

From previous experience implementing Variable Density and mosaic thinning treatments, coupled with biomass removal from the forest, we are confident that fuel loading will be greatly reduced and fuel models will be transformed to a significantly less severe condition.

Variable density or ‘free thinning’ methods are best suited for restoring integrity.

Thinning goals include:

1. Create repeating gaps of varying sizes and shapes.
2. Create or retain repeating groupings of the largest trees for future permanent mature and old growth for moisture retention and wildlife habitat.
3. Leave green islands of tree or shrub thickets (e.g. doghair conifer patches) for wildlife habitat throughout the stand.
4. Enhance or maintain productivity of understory shrub and herbaceous vegetation.
5. Retain large down woody debris for moisture retention, mycorrhizal inoculation sites, and wildlife habitat.

6. Retain or create large snags for wildlife.
7. Promote (especially in PSME/GASH/POMU association) a high ratio of native grasses to forbs and a high ratio of native forbs and ferns (except bracken) to shrubs.
8. Retain a significant component of hardwoods.
9. Retain all age and size classes of all native species for vertical and horizontal structural diversity (but separating multi-canopied, vertically structured tree groupings of varying sizes from other live and dead fuels).
10. Retain a wide variety of age, size, and decay classes, including dead and dying vegetation, consistent with the goal of reducing fire hazard; retain some deformed, submerch trees (e.g. pistol butts, forked tops, poor live crown %, etc.) for genetic diversity and wildlife.
11. Retain lichen and moss species variety, some mistletoe-infected trees, and some live trees with heart rot (conks).
12. Create overall structural characteristics (arrangement of live and dead fuels) appropriate for restoration of the historical fire regime of frequent, low to moderate intensity forest underburns.
13. Create or maintain light conditions (sun or shade) which discourage weedy exotic or native generalist species and favor native endangered or threatened, wildlife, cultural, economic, and conservative species (“conservative” = non-generalist, sensitive species which require very specific habitat niches and are generally uncommon, rare, or threatened).
14. Retain vegetation with evidence of use by wildlife (e.g. bird or wood rat nests, burrows, cavities, and hollows, etc.).
15. Retain sheltered connectivity and major game trails between selected late successional stands.
16. Retain as much canopy closure as possible for ephemeral and perennial stream gulches.
17. Generally favor early seral hardwood and softwood species.

Ecological Considerations & Criteria

A) Basic Tree Marking Guidelines

- Retain all trees above 16” DBH.
- End Result is between 85 and 90 trees per acre greater than 6 inches dbh are left.
- Favored species in decreasing order of preference are:
Sugar pine, ponderosa pine, incense cedar, Douglas fir, white fir, hemlock
- Retain all hardwoods.
- Do not cut sugar pine
- Retain saplings.
- Within the “skip zones” retain tree stems under 6 inches in diameter that are in “free to grow” locations.

B) Shrub & Herbaceous Patch Retention Areas

- Well-established native vegetation patches of Oregon grape, bear grass, and salall etc. will be buffered and protected in random locations throughout unit 7. These areas will be marked in a circumference with green hanging ribbon.
- Consideration will be made for the retention of mock orange, pacific dogwood, ocean spray, spikenard, and other native shrubs.

C) Riparian Reserve Treatments

Treatment Variation

25-acre upper road portion of unit 7

Class 4 stream-Ephemeral / Intermittent

- No heavy equipment will be used within 100 feet of riparian area unless it is on an already approved yarding trail / road.
- 100-150 trees per acre will be retained- maximum 20x20 spacing.

Stream Structure Treatment

- Primary shade zone is 30 feet-no commercial extractions. Fall and leave the largest available trees boles across the channel at an average of one tree every 50 feet (existing fallen trees will not be counted).
- From the primary shade zone out to 70 feet commercial operations can occur with machinery limited to approved yarding trails / roads.

D) Wildlife

- Retain woodrats nests.
- During slash treatment, wildlife piles will be created to serve as woodrat nests. The woodrat is one of the main prey sources for the Northern Spotted Owl.

Lomakatsi Restoration Project – Boulder Stewardship Demonstration Project Prescription

- Leave trees will be limbed 100 feet from roadways to reduce ladder fuels. Remaining leave trees will not be limbed to maintain structural diversity for wildlife considerations.

Snags

- 2 snags per acre will be retained throughout the unit. This is 66 snags across the entire unit.
- An average of 4 trees per acre will be marked to serve as downwood. Each tree averages 3-4 pieces of downwood to meet the requirements.

Downwood

- 10 pieces of down wood will be felled for each acre. This is 330 downwood logs for the entire unit.
- Pieces will be 20 feet long and 5 inches at the top (small end of tree)
- An average of 4 trees per acre will be marked to serve as downwood. Each tree averages 3-4 pieces of downwood to meet the requirements.
- **Trees selected for downwood pieces will be trees with crown ratio less than 20% or trees with heavy pitchout from fire damage and or beetle infestations.**

E) Soils

Soils recommendations for the steep face on the 13-acre ground based unit that will be treated with the harvester are:

1. Do not downhill yard due to negative impacts to the soil-site productivity.
2. Thin lightly to retain root mass for slope and soil stability.
3. When thinning on the steep area, leave stumps high to use as (stakes or anchors) for contour felled logs that will be left on the slope.
4. Do not excavate or use equipment on the toe of these slopes.
5. Retention of all live trees along the toe of the steep face slopes.
6. On head slumps, contour fall some dead trees to serve as down wood and serve as soil anchors.