

Managers' Perspectives: Practical Experience and Challenges Associated with Variable-density Operations and Uneven-aged Management

Kurtis E. Steele

Presentation Abstract

Variable-density thinning has received a lot of public attention in recent years and has subsequently become standard language in most of the Willamette National Forest's timber management projects. Many techniques have been tried, with varying on-the-ground successes. To accomplish variable-density thinning, the McKenzie River Ranger District currently uses combinations of techniques such as skips, gaps, dominant tree releases, variable thinning prescriptions, designation by description (DxD), and individually marked trees within the same harvest unit. The major challenge associated with implementing variable-density thinning occurs during pre-sale. Depending on the level of variability within the harvest unit, it is estimated that it takes up to twice as long to complete a timber sale package from layout through the final contract. Issues for pre-sale resulting from variable-density thinning include: 1) more complex physical layout on the ground; 2) increased GPSing; 3) increase in cruising time; 4) increased complexity in the maps; and 5) increase in requirements of the contract.

In a recent project the McKenzie River Ranger District has also incorporated an uneven-aged management approach for Douglas-fir (*Pseudotsuga menziesii*) in many of the proposed harvest units. This has added yet another complicated element into the planning and implementation of the project. During the planning process, consideration of current and possible future logging systems as well as layout design must be analyzed early. For example, if a unit requires intermediate supports to cable log, more thought must be given to when and where the gaps are placed within the unit's rotation. If a group select (gap) is placed around the intermediate support trees and those support trees are damaged or removed by harvesting or wind throw, future cable logging opportunities may be compromised for 30–45 years. Locations of the group selects (gaps) may be critical to design prior to first implementation. The increased complexity of an uneven-aged management rotation and variable-density thinning across the landscape will also increase future data management costs. Units will need to be stratified further in stand exams and cruises to maintain quality data. Although the increased cost may not be an issue on a relatively small scale, when applied to a landscape, such as a whole project area, it may be more problematic, especially with the Forest Service's budget continuing to decline. Increased stratification will likely require more plots per acre, which in turn, requires an increase in person-hours. It is also recommended that locations of skips and gaps (group selects) should be tracked to allow for enhanced management in the future.

Keywords: thinning, skips, gaps, group select, variable-density thinning, implementation, dominant tree release, stratification, uneven-aged, designation by description, DxD.

Kurtis E. Steele is a forest silviculturist, formerly with the US Forest Service, Willamette National Forest, McKenzie Bridge, OR, now with the Chattahoochee-Oconee National Forest, 1199 Madison Road, Eatonton, GA 31024, ksteele@fs.fed.us.