3-18-02

Young Stand Thinning and Diversity Study
Treatment Selection within Blocks

I searched through my files on this study, and the earliest reference I found regarding the selection of stand treatments was in a February 12, 1990 version of the Study Plan. It stated that although randomness was preferred, the appropriate prescription for a stand may well depend on pre-existing disturbance patterns caused by insects, disease or windthrow. Other references to the selection of treatments by date, include:

March 27, 1991: The notes from a planning meeting included the following statement about the placement of treatments: "Ideally, treatments would be randomly assigned at each site. Consistency of site conditions for a given treatment across replications is more important though. Need to collect more specific site data (e.g. hardwoods, down wood) in order to assign treatments to specific harvest units."

June 12, 1991: At this meeting it was agreed that "Three variables will be used to assign treatments to stands if there are significant differences between the sites – ratio of conifers to hardwoods, snags, and down wood. If there are not significant differences, treatments will be randomly assigned."

October 8, 1991: In a discussion about experimental design, it was suggested that, if feasible, assign treatments to units for comparison of skyline to ground systems and skyline to ground/mechanized systems.

November 4, 1991: The first item on the agenda was "Assignment of treatments to units." A table of vegetation data was displayed for each of the 16 units that included, snags > 4" (only Blue River had data), ratio of conifer to hardwood species, conifer cover, basal area of trees > 5", conifer tpa > 5", and average dbh. This table also showed the initial assignment of logging systems and silvicultural treatments. The notes also included a statement that Bill McComb was going to check on the statistical validity of this approach (assigning units) versus a random approach.

December 12, 1991: During a field trip there was discussion of random vs subjective sampling. Bill McComb had talked with a department statistician. The recommendation was that "if we stick with the assignments as we have them, either the replicates need to be similar in terms of their vegetation components, or a different type of analysis (covariate?) will need to be done."

In addition to the meeting notes above, a review of the silvicultural prescriptions revealed some additional clues:

Tap Thin – Blue River: Stand 1 has the lightest stand density and is the best candidate for a heavy thin due to economics. Stand 2 has a moderately high stand density and would be a good candidate for light thin with gaps. Stand 3 (control) has the smallest

average diameter and will be ready for a commercial thin by the time this study is completed. It is also upslope from Terwilliger Hot Springs, an area of high recreation use. Stand 4 (light thin) has the highest density and opening the stand up too much could induce windfall. It is also adjacent to the Aufderheide Scenic Byway and in a sensitive visual zone. These treatments did not change from the initial assignments on November 4, 1991, although the logging systems were changed to include a mix of cable and tractor, instead of just tractor, on the light thin and light thin with gaps units.

Mill Thin – McKenzie: Although the treatments changed from the initial assignment, there is no documentation of reasons. Bob Obedzinski was the silviculturist at the time. I asked him if he recalled how the treatments were assigned. He said he believes they were random, but could find no documented reference. The heavy thin had tractor logging added to the planned cable system, and the light thin with gaps was logged only with tractors, and not mixed with cable.

Flat Thin – Middlefork: One large stand on Christy Flat. Treatments assigned randomly, and no changes from the initial assignment. All logging was with a mechanized system.

Walk Thin – Middlefork: Treatments mostly random, but the control had to be located to avoid earlier roadside treatments, and topography was a factor in the heavy thin selection. The light thin and heavy thin treatments were switched from the initial assignment. Loren Kellogg thought logging systems might have been a factor in the selection. All logging was done with skyline.

After looking through the files of meeting notes kept during the planning of the project, reviewing the resulting silvicultural prescriptions, and talking with the people involved at the time, we've reached the following conclusions: The treatments in Flat Thin and Mill Thin were randomly assigned. The treatments for Walk Thin had a mix of random and non-random assignments, and Tap Thin treatments were selected to match stand conditions or mitigate social concerns.

Jim Mayo
Silviculturist
McKenzie River Ranger District