December 12, 2000
Young Stand Study
Post-thinning Snag Creation Study Plan

Objectives and Questions of Interest
Snags will be created in silviculturally treated and untreated young stands using 2 methods to induce mortality. Snags will be monitored through time to assess wildlife use. The questions to be addressed include:

- Do snags created from trees in young stands (e.g., 14 to 18" dbh) provide habitat for wildlife?
- Which species use them for foraging?
- Which species use them for nesting?
- How long after creation do they remain useful?
- How does period of usefulness vary with creation method?
- Does snag density interact with silvicultural treatment to influence the abundance of any wildlife species? Hypothesis that nest cavity density will be greater in denser stands.

Snag Creation Prescription
One contract for all 3 Districts involved in YSS will be administered by Penny Harris (B.R. District). Snags will be created between 9/10/01 and 12/15/01. Trees will be topped with a chainsaw, and leaving "rough cut" tops to promote rapid decay. Created snags will be marked with a "wildlife tree" sign on one side, and a numbered, metal tag at the base of the opposite side.
Data to be associated with each tree (through its metal tag #) include:
Topped height; diameter at top cut; # live branches remaining; aspect of innoculum insert. In addition, a map of the created snags in each unit will be furnished by contractors.

Methods: The 2 methods of creation will be 1) topping, and 2) topping plus inoculation with heartrot fungus. District Biologists felt that innoculation by itself would not kill trees in <5 years. The current snag deficit calls for testing methods that are likely to create snags quickly.

Snag Density: Total target snag density for each unit will be one snag/acre. The number of snags to be created in each unit will vary depending on the number of natural snags or snags resulting from damage during harvest. We propose to create a minimum of 24 snags (12 by each method) in each unit. This would account for just over one third of the target snags in a 70 acre unit (approximately the size of the largest unit). More snags can always be created in the future if it is decided that 1/ac is insufficient.

Snag Size:
Neccesity of climbing trees to top them will restrict minimum size of tree selected for snag creation. Therefore, snags will be created from trees > 12" dbh.

Snag Distribution:

Snags will be created in all treatments, including control stands. Because the wildlife species most likely to use the snags in these young stands also are likely to defend territories around the snags, scattered snags may effectively provide more habitat than would clumped snags. Therefore, we propose to scatter snags such that any one acre has no more than 3 snags. However, for efficiency in relocation and monitoring, snags created from each method will be paired such that they are within 60' of one another.
Snag Species: Only Douglas fir will be used for creating snags because other species are too infrequent to comprise adequate sample sizes for statistical inference.

Log Creation: Tops from trees used to create snags will provide downed woody material for the forest floor.

Bird Monitoring

Data to consider recording

- Distinguish nesting from foraging activity
- Include natural snags in wildlife use monitoring study? E.g., random selection of 12 natural snags of similar dimensions to created snags in each unit.
- Bark beetle activity/presence