

Fungi provide a variety of ecological functions. Fungi can aid in the uptake of nutrients and water for plants and aid in the decomposition of organic matter, making nutrients more easily available for uptake by plants (Pilz and Molina 2002; Oria-de-Rueda 2010). It has been documented that fungal diversity is associated with increased biodiversity of plants in forest ecosystems (Marcel et al. 1998). Therefore, fungal production and diversity play an important role in healthy forest ecosystems.

However, fungi are extremely sensitive to disturbance and forest treatments (Pilz and Molina 2002). Many timber-harvesting operations can severely disrupt fungal production. One question scientists have raised is which types of timber harvest treatments affect fungal production the least (Amaranthus et al., 1996; Pilz and Molina 2002).

To answer this question we created a total of eight treatment units. Four forest units were treated using two conventional harvesting methods (Single Tree Selection and Group Tree Selection), two using a newly developed harvesting method—Structural Complexity Enhancement (SCE), and two units were used as controls. Within these treatment units 10 x 10m plots were created, and all fungal fruiting bodies within the plots were identified to find a fungal species richness for each of the plots. Plots were sampled four times over the summer of 2011.

Differences in fungal species richness between plots were analyzed using a repeated measures ANOVA. Plots within SCE treatment units were found to have significantly higher richnesses than in conventional treatments or the controls.

Our results show that it is possible to increase fungal species richness using forest management practices. Land-owners and timber harvesters may want to use this information to promote fungal diversity and consequently forest health. More research in this field is needed to understand the mechanisms which increase fungal diversity in forest ecosystems.