Biodiversity Conservation in Commercial Boreal Forestry: The Optimal Rotation Age and Retention Tree Volume
Erkki Koskela, Markku Ollikainen, and Timo Pukkala
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This article examines biodiversity conservation in commercial boreal forests. The means of promoting biodiversity are green tree retention and prolonged rotation age, which create dead and decaying wood artificially and via natural mortality, respectively. The authors extend the Hartman model to cover biodiversity benefits and to allow for leaving retention trees standing at the final felling. The authors first characterize qualitatively the socially optimal choice of the harvest volume and rotation age. They then assess empirically the optimal solution in a simulation model calibrated to the Finnish forestry for a pine stand. The authors find that biodiversity conservation increases the socially optimal rotation age beyond the Faustmann rotation age. The optimal volume of retention trees increases (decreases) with biodiversity valuation (timber price). The optimal retention volume is higher than suggested by the current forest management recommendations or certification systems.

Stand Structure and Composition in a Northern Hardwood Forest after 40 Years of Single-Tree Selection
Jonathan K. Neuendorff, Linda M. Nagel, Christopher R. Webster, and Maria K. Janowiak
upcoming in *Northern Journal of Applied Forestry*, September 2007

Uneven-aged northern hardwoods of the Great Lakes region are managed primarily through single-tree selection harvesting. This report quantified species composition and stand structure after 40 years of single-tree selection in five stands as compared with three stands that were untreated for 40 years. Relative density and importance value of sugar maple significantly increased under single-tree selection, whereas relative density of yellow birch significantly decreased and eastern hemlock remained unchanged. Contemporary seedling and sapling layers were dominated by sugar maple regardless of treatment, but unmanaged stands contained more species. Diameter distribution varied over time and between unmanaged and managed stands. Increasing q was the most common distribution shape in 2004, and there was no clear trend toward a negative exponential or rotated sigmoid distribution over time. These results suggest that long-term single-tree selection may result in regeneration of fewer tree species commonly found in this forest type, with potential implications for future stand structure.

Assessing the Safety Training Needs of Spanish-Speaking Workers in the Southeastern Logging Industry
Brandon O’Neal, Robert Shaffer, and Robert Rummer
upcoming in *Southern Journal of Applied Forestry*, August 2007

Spanish-speaking workers (SSW) employed on logging operations in the southeastern United States present a potential safety concern because of inexperience, lack of proper safety training, and language-barrier problems. SSW data were collected through field surveys and field interview questionnaires with logging operations in the Southeast. As of 2005, SSW represented 3.37% of the logging workforce in the Southeast. Ten percent of logging operations employed one or more SSW. Ninety percent of loggers with SSW employees employed at least one SSW who could effectively interpret instructions to the other SSW. Seventy-three percent of respondents cited “hands-on” demonstration training as the most effective way to present safety training to SSW. Distributing safety training manuals and brochures printed in Spanish is unlikely to be effective, because only about one-half of the SSW were literate.

In Situ Gene Conservation of Six Conifers in Western Washington and Oregon
Sara R. Lipow, Kenneth Vance-Borland, J. Bradley St. Clair, Jan A. Henderson, and Cindy McCain
now appearing in *Western Journal of Applied Forestry*, July 2007

A gap analysis was conducted to evaluate the extent to which genetic resources are conserved in situ in protected areas for six conifer species in the Pacific Northwest (Sitka spruce, sugar pine, western white pine, ponderosa pine, western redcedar, and western hemlock). The gap analysis involved producing a GIS database detailing the location of protected areas and the distribution and abundance of tree species as inferred from data on potential plant association groups, actual plant associations, and actual land cover type. The results show that most seed zones and ecoregions contain at least 5,000 mature individuals in protected areas, indicating strong in situ gene conservation. Protection is less complete, however, for western white pine in the Puget lowlands, where urbanization and disease have reduced populations below safe levels.