

DYNAMICS OF MID-APPALACHIAN RED SPRUCE-HARDWOOD ECOTONES

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Ten belt transects, each consisting of a series of contiguous 10 x 10 m (100 m²) quadrats were established between 1992 and 1994 at seven study sites in the mountains of southwestern Virginia and eastern central West Virginia. All of the study sites occurred in areas where a relatively distinct and narrow ecotone existed between a forest community dominated by red spruce (*Picea rubens* Sarg.) and one dominated by hardwoods. Each transect was positioned so that it extended from the red spruce community, across the ecotone (the transition zone between hardwood and red spruce community), and into the hardwood community. Eighteen quadrats occurred in the hardwood community, 31 in the ecotone, and 18 in the red spruce community. In 2004 and 2005, all transects were resampled to assess the changes that had taken place. Results indicate that all strata of vegetation had exhibited compositional changes in such a way that both the ecotone and hardwood portions of the transect are becoming more similar to the red spruce portion. In general, red spruce either maintained its ecological status or increased in numbers in all size classes, with a noticeable expansion into the surrounding hardwood community at some study sites.

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