

25+ YEAR CHANGES IN FOREST STRUCTURE AND TREE-RING PATTERNS IN THREE OLD-GROWTH RED SPRUCE STANDS IN WEST VIRGINIA

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The extent of red spruce (*Picea rubens*) forests in West Virginia has dramatically declined from an estimated 1.5 million acres in 1865 to 30,000 acres today because of widespread logging and forest fires during the late 1800s and early 1900s. Remaining old-growth (i.e., unlogged and unburned) spruce forests are particularly rare. In 1982, field plots were established for the first time in the only three old-growth spruce forests known in West Virginia to describe the vegetation of these unique communities. In 2007, we remeasured these stands to describe changes that occurred over 25+ years. The three case studies indicate that standing dead trees are a common feature of old-growth spruce stands. Spruce regeneration naturally regenerates under small- and large-scale disturbances, but can be inhibited by dense thickets of rhododendron. Declining radial growth trends characteristic of the 1980s were not always observed among current spruce trees.

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