LONG-TERM RESEARCH ON THE USFS KANE EXPERIMENTAL FOREST IN NORTHWESTERN PENNSYLVANIA

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The Kane Experimental Forest was established and dedicated to research use in March, 1932. Scientists of that time, led by Ashbel Hough, designed studies to assess the long-term growth and development of mixed hardwood stands just growing back after the heavy industrial revolution logging that had nearly cleared the Allegheny Plateau between 1890 and 1930. In this paper, we will provide an overview of the results of four early studies, including lessons learned for design and implementation of long-term research. We will also provide an overview of more recently installed long-term studies on the Kane Experimental Forest.

One of the early studies focused on what was then called weeding, but we would call cleaning today—a replicated series of treatments in young stands to influence species composition, with full controls. This study has yielded important results about the role of pin cherry in stand development in the Allegheny hardwood forest type (Ristau and Horsley 1999), as well as important information about the response to these early interventions. A second study—or demonstration—examined the response of young stands to different strategies after a 1936 ice storm. A third was designed to provide input to yield tables, and a fourth examined thinning strategies. All of these relied on small treatment plot sizes – around 0.1 acres.

Studies installed in more recent times have used larger treatment plot sizes, ranging from 2.0 acres through 4.9 acres. These include additional studies of thinning strategies including tests of residual density, residual structure, and styles of thinning (crop tree vs. area-wide) (Marquis and Ernst 1991, Nowak 1996, Stout and Nyland 1987), and tests of different silvicultural systems, including even-, two-, and uneven-age systems. Most recently, a 2003 wind event has created opportunities to study recovery from natural disturbance on the Kane Experimental Forest.

Literature Cited

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