



Project Impacts

NSRC-FUNDED RESEARCH FINAL REPORT

High Site Quality and Pruning Improve White Pine Lumber Yield and Quality

PROJECT AWARD YEAR AND TITLE:

2013

Measuring White Pine Log and Lumber Yields on Paired Harvests in the Adirondacks

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Eastern white pine is increasingly limited to coarse, sandy soils where it can compete and regenerate. These poorer sites, however, do not consistently yield high volumes and quality logs, possibly jeopardizing economic viability. For high quality white pine to persist as part of the Northern Forest, forest managers must understand anticipated yields based on site conditions and management actions.

NSRC researchers compared log and lumber yields from two distinct sites in the Adirondack Mountain region – a sandy site with a class 3 white pine site index versus a fertile, loamy site with a class 1 site index. Prior to harvesting operations, researchers measured 40 study trees on each site for inclusion in the yield study. Harvested logs were graded and followed through the sawmill to document lumber yield and grade.

As expected, log yield from the better site index was much greater with many stems yielding 5 to 6 16-foot logs versus 2 to 3 16-foot logs for the marginal site. The lumber quality, however, was the same for each site. Surprisingly, due to the high number of black knots and some red rot, the lower “standard” and “industrial” grades represented 60% of the lumber yield for both sites. Butt logs from trees pruned in the 1930s yielded the highest quality lumber. Using historical management data (costs and revenues) over a 110-year rotation from the high quality site, researchers calculated positive future present values with an estimated internal rate of return of 6%, indicating financial benefits from intensively managing white pine on better sites.