

Stocking Levels and Cutting Cycles in Northern Hardwoods



“Ecology and Silviculture of Northern Lake States Forests”

A research work
unit of the USDA
Forest Service
North Central
Research Station

1831 Hwy 169 E.
Grand Rapids,
MN 55744

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For more
information,
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Study Briefing

Established 1951, Dukes Experimental Forest, Michigan

Purpose:

Objectives:

- 1) To test different levels of growing stock in conjunction with different cutting cycles in regards to their respective silvicultural desirability and financial return. The study is principally aimed at determining the rate of growth and financial return on the investment in the residual stands under different stocking levels and intervals between cuts.
- 2) Change the quality of each stand and eventually the relative quality of stands managed under different stocking levels and cutting cycles.
- 3) Effect upon volume of cull in the stand and in the products under the different variables studied.
- 4) Lumber grade recovery or relative quality of products under different variables in study when the information can be obtained without additional time or cost to the government.
- 5) To possibly bring out and evaluate heretofore unknown or overlooked factors affecting uneven-aged or even-aged management.

Study Design:

The experiment uses a randomized block design, consisting of three blocks and nine treatment combinations of stocking level (50, 70, and 90 ft²/acre) and cutting cycle (5, 10, and 15 years). There was one additional treatment of 30 ft²/acre with a 20 year cutting cycle as well as a control stand. Treatments range from 7 to 26 acres and average 13 acres in size. The first replication was installed in 1952, the second in 1953, and third in 1954.

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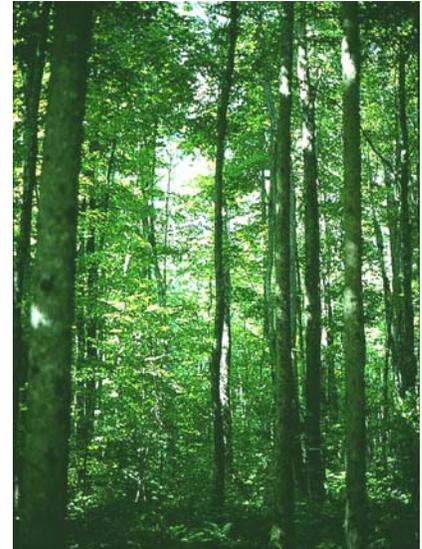
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This is the 90 feet²/acre stocking level
treatment.



Research History:

Treatments were applied every 10 years until 1972. The trees were measured at five year intervals until 1972 as well. We recently resampled this area in 2004.

Publications:

Crow, T.R., Jacobs, R.D., Oberg, R.R., and Tubbs, C.H. Stocking and structure for maximum growth in sugar maple selection stands. USDA Forest Service Res. Pap. NC-199

Investigators:

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