

**MAINE'S COMMERCIAL THINNING RESEARCH NETWORK**  
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Maine's Commercial Thinning Research Network was established in 2000 to develop a better understanding about stand responses to commercial thinning in the state's forests. Initial efforts by the network are divided into two phases. Phase I developed a set of interim guidelines for commercial thinning through the development of a software product called ThinME. Phase II, representing most of the effort, has involved establishing a statewide network of research sites to address specific questions about commercial thinning. Data from Phase II will help further refine the thinning software developed in Phase I, improve regional growth and yield models related to thinning responses, and address other silvicultural questions of interest. The plot network is currently focused on answering two key questions about commercial thinning in spruce-fir stands across the state: (1) For natural spruce-fir stands that have not received precommercial thinning (PCT), what is the influence of (a) method of commercial thinning and (b) residual density on subsequent stand response? (2) For natural spruce-fir stands that have received previous PCT, what is the influence of (a) timing of first commercial thinning entry and (b) residual density on subsequent stand response?

Twelve study sites have been established across the state of Maine. Six sites have previously received PCT and range in age from 25 to 40 years old. The other six sites have never received PCT and range from 40 to 70 years old. At each site, seven 0.37-ha (61 m x 61 m) treatment plots have been established. Commercial thinning treatments in stands that have not received PCT include a factorial combination of thinning method (low, crown, or dominant) and level of relative density reduction (33% or 50%). Commercial thinning treatments in stands that have received PCT include a factorial combination of timing of first commercial thinning (now, delay 5 yrs, or delay 10 yrs) and level of relative density reduction (33% or 50%). The thinning treatments, which used single-grip harvesters and forwarder trails spaced 30.5 m apart, were applied from fall 2000 through fall 2002. Four 0.02-ha (15.2 m x 13.3 m) measurement plots were placed at the center of each treatment plot. All plots have been measured before and after thinning. Regular post-treatment measurements are being collected from permanent tagged trees. Measurements include species, DBH, tree location, total height, and height to live crown.

Projected stand responses of the study plots have been recently developed from pre- and post-thinning data using projections from the USFS Forest Vegetation Simulator (NE TWIGS variant). These projections provide quantitative hypotheses about future growth of the residual stands and provides an opportunity to examine how existing growth and yield models, which have not been developed with any commercial thinning response data, handle projections for a wide variety of thinning treatments.

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