



# NORTHERN HARDWOOD NOTES

## Clearcutting As A Silvicultural System

Clearcutting can be one of the most effective hardwood management systems in the Lake States-if an essential criterion is adhered to. That criterion is: Regeneration must be established-that is, 2 to 4 feet high *before* you clearcut, *before* the overstory can be removed.

This means that the clearcutting silvicultural system is limited to types that are predominately sugar maple. Why? Because only sugar maple germinates at very low temperatures (usually before snow melt) and is shade tolerant enough to develop and become established in the dense shadow of a mature stand overhead. It doesn't become established, though, for many years, so clearcutting should not be done too early. If it is done too early (in a second-growth pole stand, for example), you usually get a heavy cover of herbs and very few sugar maple seedlings. The pioneer species that come in next can dominate for 30 years to come. Even more time may pass before a stand of desirable species develops under the pioneers-all because regeneration was not established *before* clearcutting.

Eventually, a stand becomes large enough (typically more than 10 inches in diameter) to let light filter through to the forest floor, and sugar maple regeneration gets a good start. When the original old-growth stands of the Lake States were cut in the early 1900's, the sugar maple regeneration that was established beneath them turned into the extensive second-growth stands of today.

Periodic thinnings-rather than clearcutting-are usually what's needed in sugar maple pole stands. Not only do they increase tree size more rapidly, they also speed up the development of regeneration on the stand floor. After two thinnings sugar maple regeneration is always established (although the main emphasis continues to be growing the overstory trees to maturity).

Clearcutting is not advisable for other northern hardwood types, particularly the light-seeded species such as eastern hemlock and yellow and paper birch. These species require both site preparation and the overstory conditions provided only by shelterwood cuttings.

Textbooks often leave the mistaken impression that you clearcut first, then worry about regeneration *later*. This works well in aspen stands (which are often used to illustrate the clearcutting silvicultural system) because aspen suckers easily form an extensive root system. But among northern hardwoods, only the sugar maple types can reproduce well under clearcutting, provided regeneration is already established.

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