



Weeding and Thinning Young Forest Stands

[Maine Forest Service, DEPARTMENT OF CONSERVATION, 22 State House Station, Augusta, ME 04333](#)

INTRODUCTION

Though often neglected, weeding and thinning are worthwhile silvicultural practices for improving the quality of selected trees on forest stands, for timber production or for other aims. *Weeding removes undesirable species of trees to promote the growth of desired species. Thinning promotes the growth of the best individual trees of those desired species by removing damaged, diseased, or deformed among too closely spaced trees.*

Weeding and thinning promote a higher percentage and improved quality of desired trees per acre.

From the perspective of timber production, forest stands may be considered as composed of:

- ♦ desired crop trees,
- ♦ trees useful to crop trees as "trainers" or "fillers" and
- ♦ unwanted trees selected for elimination from the stand.

Tree selection is of vital importance to the quality and long-term outcome of any weeding or thinning operations. There are many benefits associated with saplings growing in proximity with trees and other saplings. Trees shelter each other during their most vulnerable early years from wind, water, erosion or browsing. Even unwanted species may act as such "trainer" or "filler" trees. Young trees growing in proximity encourage the straight, upward reach of their young stems seeking light. Later, as the saplings mature into trees in a closed canopy, competition for limited resources begins to restrict and hamper their growth, outweighing benefits.

Weeding is the first step toward improving growth of crop trees among stands with stems up to 4 inches in diameter breast high. Weeding removes competitive, undesired species in the same height class as the desired crop trees. Subsequent thinning out crooked, forked, diseased or damaged stems favors growth of the most valuable of those preferred trees.

Much of our forest land produces an abundance of valuable native species. It is usually more cost-effective to help these desired species already established than to plant trees. Trees remaining after weeding and thinning respond quickly with increased growth.

Weeding or thinning are usually priority forestry activities for Maine landowners wishing to improve the quality and value of future timber harvest. However, weeding and thinning may serve other values of forest stands as well, such as:

- ♦ favoring food producing trees for wildlife
- ♦ to protect rare or foster a diversity of species for ecological values
- ♦ to develop some non-timber forest product, such as weeding and thinning a stand of sugar maples for improved sap production
- ♦ or to encourage the growth of trees creating a more beautiful array of spring flowers or autumn color.

Selection in Different Soil Types:

Understanding which species tend to thrive on different soil types may help you select well for any weeding process. With some exceptions (noted below), one should **generally favor the best stems of preferred species**, according to the following groupings:

On **Dry Sites**, usually with sandy or shallow soils, pines usually dominate over other species.

Preferred species: *White Pine, Red Pine*

Acceptable species: *Red and White Oak, Red Maple, White Birch, and White Spruce.*

Undesirable species or trees unsuited to site:
Aspens, Gray Birch, Pin Cherry, Elm, Ash, Sugar Maple, Yellow Birch, Beech, Basswood, Hickories, Hop hornbeam, Willows.

Moist Sites usually contain deeper topsoil and loam. Those sites with moderately to well drained soils are suitable for growing a greater variety of preferred species than either dry or wet soils. However, as all species tend to thrive in these, additional weeding or thinnings will probably also be needed.

Preferred species: *Red Oak, Sugar Maple, Yellow and White Birch, Basswood, Ash, White Pine, Red Pine, Hemlock, White and Red Spruce*

Acceptable species: *Red Maple, Beech*

Unsuitable species: *Aspens, Alders, Blue Beech, Elm, Pin Cherry, Hop hornbeam, Mountain Maple, Willows.*

Wet or Poorly Drained Sites are not generally suited for commercial tree production.

These groupings are only general tendencies, and should be considered in context. **Examples of exceptions** that will occur are:

- ♦ Acceptable species should be favored when preferred species are not present.
- ♦ A good straight stem in an acceptable species should take precedence over a poor quality stem though in a preferred species. Crooked or divided stems should be thinned out to improve the stand quality.
- ♦ Undesirable species may be retained as "trainers" but should be eliminated when they are cramping or outgrowing preferred or acceptable trees.

- ♦ Of course, species unsuitable for timber, might be valued for other aims. Red Maple and Shagbark Hickory, for example, yield an exceptionally nutritious leaf litter, which makes them a valuable for the health of river ecosystem, when they grow near streams.

Consult your state or consulting forester for recommendations concerning your particular locality and aims.

Pure stands of either conifers or hardwoods, because of their more uniform growth rate, may need little or no weeding. The need for weeding is usually greatest in mixed stands of conifers and hardwoods. To assure that they maintain a dominant position in the stand, where conifers are the crop trees, several weedings may be required. In mixed stands where hardwoods are to be favored instead of conifers, the need for weeding is less. When weeding in mixed stands of conifers and hardwood, work toward smaller patches of pure hardwoods or conifers by favoring one or the other. By doing so, rates of height growth are more uniform within the group, response to treatment is more effective and the need for future weeding is reduced.

Trees removed in weeding or thinning may be cut or girdled with an ax, hatchet, machete or similar tool. **Herbicides** may be applied in frills or used as a basal spray, but **must be federally, state, and locally registered and applied according to authorized uses, directions on the label and other federal or state requirements.**

For more information, please contact:

Maine Forest Service
DEPARTMENT OF CONSERVATION
22 State House Station
Augusta, ME 04333

1-800-367-0223 (in - state)
Or 207-287-2791

www.maineforestservice.org

