



Weed Management in Riparian Forest Buffers

Riparian forest buffers (RFBs) provide improved water quality by reducing stream temperatures and supplying the food source for aquatic macroinvertebrates; fostering wider, slower streams with more biologically active streambed surface area; and creating a more diverse plant and soil community that effectively intercepts and utilizes suspended soil and nutrients coming from upland surface flow. RFBs also provide the foundation for diverse wildlife habitat. However, without effective weed control during establishment and ongoing maintenance early in the life of the planting, your RFB may never become a forest. It is not enough to plant the trees and 'let nature take its course'. The best habitat and ecological value comes from achieving canopy as soon as possible. To get to the forest, you need to 'farm' the trees.

This is especially true where RFBs are established in existing cool-season grass pastures or hay fields (the 'green death').

Effective weed control reduces competition (increases tree growth), reduces cover for pests such as meadow voles, and makes it easier to properly inspect the trees and tree shelters.

Control Weeds Before Planting

The best time to begin your weed control program is the season before the RFB is planted (two would be even better). Having weeds under control in the fall prior to a spring



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Figure 1. Preplant weed control in the fall before a spring planting gives trees a weed-free start, makes planting much easier, and allows you to manage weeds on a maintenance basis rather than continually needing to bring an infestation under control.



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Figure 2. Herbicide treatments that eliminate grass groundcover may 'release' problem species such as Canada thistle (*Cirsium arvense*, above). Maintenance treatments to keep the tree rows clean will not eliminate creeping perennials. Effective weed control in riparian forest buffer plantings requires both maintenance applications to provide vegetation-free area around each tree, and ongoing spot treatments with glyphosate to prevent perennial species from colonizing those bare areas.

planting provides better control of perennial species, allows you to plant earlier in the spring, and makes planting much easier (Figure 1).

Two basic approaches are to eliminate the existing groundcover and replace it with a less competitive groundcover, or establish weed free strips for the planted trees in the existing groundcover.

Where the existing cover is cool-season, forage grasses such as tall fescue, timothy, orchardgrass, or reed canarygrass, long term success of the RFB may be easier to achieve if you remove the grasses entirely and replace them with a forage legume such as white clover.

If you choose to establish weed-free strips, establish 4- to 6-foot wide strips. The wider the weed-free strip, the better the opportunity for fast tree growth. Wider weed-free strips also reduce cover for meadow voles, and decrease the chance of mower damage if you mow the vegetation between the strips during the establishment phase.

We recommend using a *glyphosate* herbicide (the active ingredient in 'Roundup' products) in September or October. *Glyphosate* is a non-selective, systemic herbicide that does not have residual soil activity. It controls a wide range of species and does not pose a risk of injury to your trees. Woody species such as multiflora rose need to be treated

