

Northwest Woodlands

A Publication of the Oregon Small Woodlands, Washington Farm Forestry, Idaho Forest Owners & Montana Forest Owners Associations

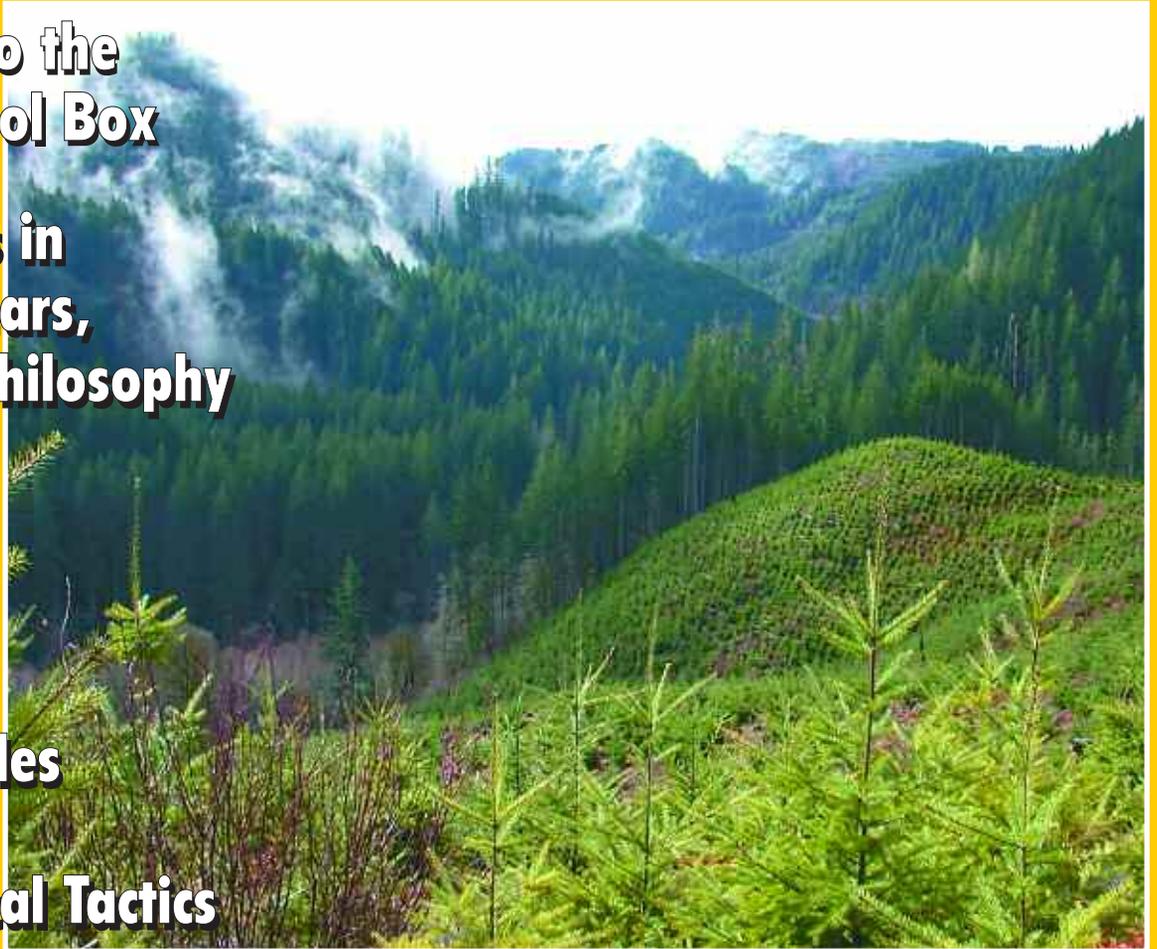
CONSIDERING CHEMICALS

**Peeking into the
Chemical Tool Box**

**Toxic Assets in
Forestry: Fears,
Facts and Philosophy**

**Controlling
Competing
Vegetation**

**Family Tackles
Weeds with
Non-Chemical Tactics**



Trends in Forest Chemicals

**NEXT ISSUE . . .
Climate Change**

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A healthy young stand of Douglas-fir on Hampton Tree Farm land in the Oregon Coast Range, thanks to excellent vegetation management.

Photo courtesy of Bruce Alber

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Peeking into the Chemical Tool Box Available to Forest Landowners

By **STEVE R. WEBSTER**

Many forest landowners breathe a cautious sigh of relief when their newly established plantation is nicely stocked and has reached the “free-to-grow” stage, meaning the trees and the landowner are equally tall and the trees have gained the upper hand over competing vegetation and animals that want to eat them entirely, or at least in parts. After this stage, plantations may experience deprivation from bark-stripping bears, antler-polishing elk and pernicious root rots, but getting to the free-to-grow stage is clearly a benchmark in the chronology of plantation development.



PHOTO COURTESY OF STEVE R. WEBSTER

When a mature big leaf maple is cut, the stump produces sprouts, which when left untreated can develop into clumps of stems with no commercial value.

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For those wanting to use it, a small tool box of chemicals is available to help landowners get plantations to this stage by warding off tree eaters and repressing competing vegetation. Among the most common of chemicals, repellants are ones that smell or taste bad to deer, elk and rabbits—the most troublesome trio of tree eaters. These animals avoid eating foliage covered with such chemicals—the operative word in this sentence being “covered.” Foliage grown or rain-washed after repellant application may become lunch for a hungry animal. Various formulations are

available, including products derived from protein substrates, sea shells and garlic, for example. Readers should note that all repellants on the market are not equally effective. If in doubt, seek the advice of experienced, trusted sources. Readers should also note that repellants are not manufactured chemicals, but instead derived from natural products.

Pocket gophers, voles and mountain beavers are other critters that relish young seedlings in their diets. Deadly force in the form of poisoned bait may be required to check the ravages of root-eating pocket



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gophers. Such measures, however, should always be a last resort. Voles are drawn to the tender stem bark of seedlings plump from pampering and a nutritious diet served in the nursery. Combating voles is best achieved by reducing their preferred habitat, which is grass, and exposing the raspals to hawks and owls. Although chemical control of mountain beaver has been researched, it has not proven suitable, leaving trapping and the good luck of hungry coyotes as the preferred control procedures.

Competing vegetation that challenges attempts to promptly produce free-to-grow plantations fall into one

landowner's choice, understanding, however, that research over the past decade has clearly confirmed that reduction of competing vegetation strikingly enhances early plantation survival and growth.

Several chemical herbicides can be used to reduce competition from broad-leafed trees and woody shrubs in conifer plantations. One of the most wide-spread and aggressive hardwood competitors is big leaf maple. When a mature tree is cut, the stump produces numerous sprouts that grow far more rapidly than conifer seedlings. Left untreated, these sprouts develop into clumps of



PHOTO COURTESY OF STEVE R. WEBSTER

Spot spraying, which was done around these seedlings, is one technique used to apply chemicals.



PHOTO COURTESY OF STEVE R. WEBSTER

A hillside view of a plantation dominated with big leaf maple clumps.

of two groups. One is broad-leafed trees and woody shrubs; the second is grasses and herbs (broad-leafed weeds). Chemical and other methods to combat these plants will be discussed momentarily, but first it must be said that the first line of defense against competing vegetation, as most landowners understand, is to practice clean site preparation and plant promptly using high-quality seedlings and high-quality planting techniques. However, even though these practices may have been fully employed, competing vegetation will become established on the site to some degree. The degree of repression of competing vegetation is a

stems with no commercial value, which rob growing space from desired crop trees. A "thin line" treatment applied to two- or three-year-old sprouts will kill them and the stump. Thin line is the manual application of a thin line of undiluted herbicide containing the chemical trichlopyr around the circumference of each sprout 12-24 inches above their juncture with the stump. If older than three years, "hack and squirt" is preferred, whereby a series of hacks are made in each sprout and filled with an herbicide containing imazapyr.

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Peeking into the Chemical Tool Box Available to Forest Landowners

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In addition to big leaf maple sprouts, conifer plantations often contain individual broad-leafed trees such as western cherry, cottonwood, willow, red alder and chinquapin. Whether these trees are left for their commercial value and contributions to stand diversity is the landowner's choice. If desired, however, they can be readily killed using the hack and squirt method and an appropriate chemical, which may be trichlopyr, imazapyr, 2,4-D or a combination of these depending on species. Landowners must follow labels and employ or seek advice from licensed, experienced individuals in order to select the appropriate herbicide and dosage for the species and situation of concern.

Small trees or woody shrubs such as vine maple, hazel, Scotch broom and snowbrush can also be controlled with one or the other of the herbicides mentioned earlier. Often the stems of these species are severed and the herbicide applied to the surface of the cut stump. Various application devices are used for the thin line, hack

and squirt, and cut stump methods.

Slashing of broad-leafed trees and woody shrubs, without chemical treatment, can also be used to impede competing vegetation. Slashing is best done in mid- to late-summer and stems should be cut as low as possible and below the last live branch. Most of these species will sprout after slashing, but cutting them down will tilt the competition for resources in favor of desired species.

Using herbicides applied with backpack sprayers to control grasses, herbs, blackberries and low-growing woody plants is also an option available to landowners. In addition to chemicals mentioned earlier, others are glyphosate (Roundup® and others), sulfometuron methyl (Oust®) and hexazinone (Velpar®). These last three herbicides are most commonly used to control grasses and weeds. Some of these chemicals are applied before planting, some after planting. "Spot spraying" around individual seedlings is one method for applying these chemicals. Broadcast spraying with backpack sprayers is also an option, but it requires considerable skill and practice to be effective.

A rather common occurrence in the past few decades has been the

conversion of old pastures to trees. At first glance, this would seem to be an easy task relative to reforesting a recent harvest thick with slash and brush. Recall, however, my earlier comments about grass being the preferred habitat of voles. Unless they are controlled, voles can devastate a new plantation. The trick is near complete control of the grass, and methods for doing this include plowing, disking, repeated close mowing, herbicides and fabric mulches. Some landowners have reported good vole control by erecting wooden perches that invite hawks and owls to visit the plantation and prey on the voles. Some especially grassy or weedy forest sites may also harbor voles, and their control may be necessary using any number of the methods mentioned above.

This article has attempted to provide an overview of chemicals and methods of use available to forest landowners in the Northwest. Prescriptions have not been included because they are beyond the author's qualifications and the scope of the article. The article is not comprehensive, and readers will no doubt note references to insecticides, fungicides or fertilizers are not included. Also not included is reference to aerial application of chemicals, which is possible, but used rarely by small forest landowners. Lastly, although chemicals are useful tools, landowners must always remember they are potentially harmful to the operator, other people and to the environment. When using chemicals, always wear protective clothing and eye shields, follow container labels, and follow forest practices and local rules and regulations. Both Oregon State University and Washington State University provide excellent guides for the safe and effective use of forest chemicals. ■

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