Woody Invasive Brush Management - NRCS Practice Code 314 –

Refer to: Conservation Practice Standard Brush Management (Code 314) (usda.gov)

Proper brush management is very important and one of the most effective ways to improve wildlife habitat. Stands may become overcrowded or choked by invasive woody species such as Asian bush honeysuckle, autumn olive, multiflora-rose and many, many others. By reducing the competition throughout stands and removing invasive species, brush management increases mast food production, improves understory habitat, and improves native species diversity and regeneration.

It is recommended that the species targeted in the brush management practice be cut and chemically treated, hack and squirt treated, foliar sprayed, basal bark sprayed, girdled, or a combination of these practices. Fire may be used as an additional method of control and can aid in promoting desired species. The time to complete Woody Invasive Brush Management will depend on the target species and practice being implemented.

Exotic Control Recommendations

To create optimum growing conditions for selected crop trees and prepare for the next generation of crop trees, an exotic species control is needed. The exotic control should be carried out in the following manner:

Target Species

Bush (Amur) and Japanese Honeysuckles, Autumn and Russian Olive, Buckthorn species, Burning Bush, Osage-Orange (Hedge/hedge apple), Black Locust, Multiflora-rose, Privet species, Tree-of-Heaven, Bradford Pear, Siberian Elm, Norway Maple, Oriental Bittersweet, Princesstree, Japanese Barberry, Wintercreeper, and others:

Treatment Methods

There are several ways to remove invasive species from your property. These methods may be used in conjunction with each other over time in order to achieve desired results. The treatment types are:

1. Foliar Spraying
2. Cut Stump Method
3. Girdling
4. Hack and Squirt
5. Basal Bark Spraying
6. Prescribed Burning

Each method has advantages and disadvantages. One thing is for certain; all practices will require follow up treatments in order to maintain the desired post-treatment conditions. Foliar spraying is one of the most affordable ways to control an infestation, but several treatments need to be applied in succession in order to ensure eradication. Cut stump method will ensure a higher kill percentage but is more labor intensive than other practices. Girdling is a cost-effective way to kill vegetation, but areas must also be chemically treated and checked for re-sprouting. Hack and squirt is an affordable method requiring little equipment but it requires larger (>2" Diameter) target species, can be labor intensive, and will require persistent follow up. Basal bark spraying is a cost-effective way to eradicate infestations, but with some species it is hard to get near the stem to spray directly on the bark and it will require the use of more herbicide than many other methods. Prescribed burning will help reduce non fire tolerant species (i.e. many invasive plants) as well but alone is not enough of a control measure. All of these practices used in conjunction with each other can aid a landowner in returning their property to native species.

Herbicide selection

Herbicide should be selected based upon the species you are trying to control. We recommend that you contact a local chemical dealer to talk about the alternatives. It the applicator's responsibility to read and follow all label directions for a pesticide. Follow all procedures set forth for obtaining and using a chemical applicator's license (if applicable).

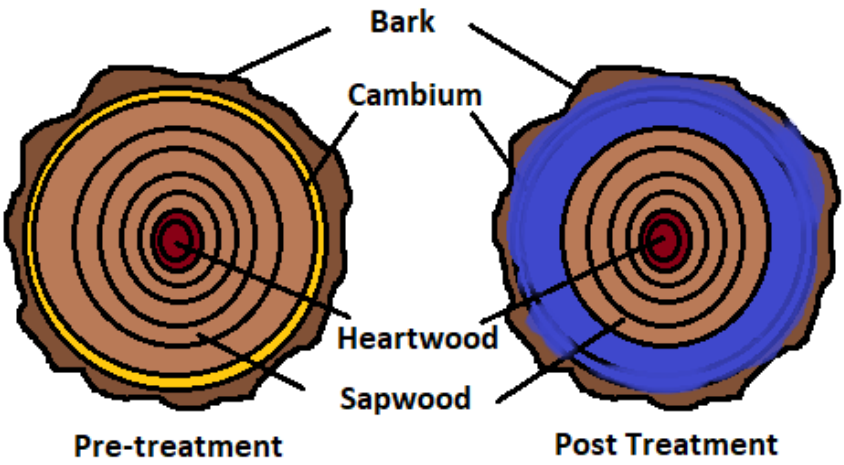
It is also important to select an herbicide based on the treatment being conducted on the property. The differing methods may need to have different chemicals in order to manage the plant. Some chemicals can be used for several types of methods. Common chemicals used for each treatment will be shared in the section below. Please consult with a chemical dealer about your management objectives and treatment method before selecting your herbicide.

Conducting Each Treatment

Cut Stump Method

Cut stump method involves severing the target's trunk near the ground (within about 6") and applying herbicide to the freshly cut surface. Generally, herbicides used are glyphosate-based or triclopyr-based. Make sure the cut surface is clean (not covered in dirt) and apply herbicide within 10 minutes of cutting. On stems 2" or less in diameter, the entire surface may be treated but only the outer living ring of tissue known as the cambium (outer 1") must be treated. See Figure 1. Adding a dye to your herbicide is highly recommended and will aide in preventing duplicate application and preventing missed treatments. Herbicide can be applied with a spray bottle, sponge, or paint brush. Do not use solutions that are mixed with water when temperatures are below freezing. Do not use this application from February – April when trees are in peak sap flow. Always consult professional herbicide dealers for specifics on herbicides. Follow label instructions and take precautions to not mix or load chemicals near waterways or riparian areas.

Figure 1. Cut stump treatment diagram.



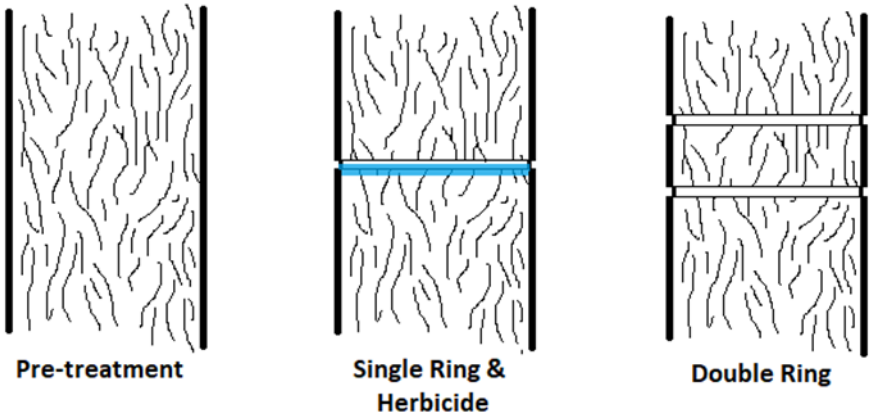
Foliar Treatment – Foliar treatments are conducted by spraying the entire surface area of the plant to defoliate it. This treatment should be conducted prior to the flowering of the species each year to prevent additional seed crop from that species. Foliar treatments oftentimes need to be conducted several years in succession in order to achieve control. Methods used for foliar spraying include hand-pump spraying, back-spraying, aerial (helicopter) or mechanical spraying (ATV sprayer, boom sprayer). This method tends to be less labor intensive than other methods, but more follow up treatments are necessary to achieve control. Chemical often used in foliar spraying include Roundup (Glyphosate) and Garlon 3A (Triclopyr). Other chemicals may be used. Using a dye is generally recommended to ensure proper coverage is occurring. Surfactants are often added to increase surface coverage and stickiness of the herbicide. Late fall or early spring, when native vegetation does not have leaves, is preferred for this treatment to reduce or eliminate damage to actively growing natives. Please contact your local chemical dealer about other chemicals. Follow all label directions for the chemicals selected.

Figure 2. Trout Lilies emerging from the forest floor following foliar treatment of Asian Bush Honeysuckle.

Girdling

Girdling is an effective technique to cull larger invasive trees or shrubs while keeping them standing for wildlife habitat. Two complete and connecting rings spaced about 3”- 4” apart and 1”- 2” deep (through the cambium) will top kill the target tree. Many invasive species will aggressively stump-sprout from this method if herbicide is not used. They can be followed up with a foliar spray or the initial treatment can be one concentric ring with herbicide applied around the entire cut to reduce survival. However, most girdling should be followed with herbicide to ensure target tree mortality. Common herbicides used with the girdling technique include glyphosate and triclopyr and dyes are recommended. Do not use this application with herbicide from February – April when targets are in peak sap flow. Always consult professional herbicide dealers for specifics on herbicides. Follow label instructions and take precautions to not mix or load chemicals near waterways or riparian areas

Figure 3. Girdling treatment diagram.



Hack and Squirt

This herbicide application technique consists of applying herbicide to a series of downward angled cuts into the target’s cambium layer. The number of cuts depends on the diameter of the target and herbicide selected. Generally, one cut is needed per every 1”- 2” in diameter. An axe or machete, herbicide with dye, and a spray bottle are the only items needed for this practice making it a very cost-effective treatment. Cuts are generally 1”- 3” wide and should be treated immediately after the cut occurs. Oftentimes, applicators will leave the hatchet in the wound to guide the herbicide into the cut. Be sure not to overfill the cuts as any herbicide not taken up by the tree will just be wasted or can potentially cause off-target harm. Common herbicides used in this practice include glyphosate, dicamba, imazapyr, and triclopyr and dye is recommended to reduce misses and double treatment. Do not use this application with herbicide from February – April when targets are in peak sap flow. Always consult professional herbicide dealers for specifics on herbicides. Follow label instructions and take precautions to not mix or load chemicals near waterways or riparian areas.

Figure 4. Hack and Squirt herbicide application.

James H. Miller, USDA Forest Service, Bugwood.org.

Basal Bark Spraying

This herbicide application technique involves the spraying of the bark at the base of the target with herbicide usually in basal oil solution. The bottom 15" of the target trunk should be covered on all sides and if the target species is multi-stemmed all stems should be coated. This is a faster method than "cut stump" but will require more herbicide. Treatment can be carried out year-round if stems are not covered with ice or snow, but it is most effective in the fall. Ester-based triclopyr mixtures in basal oil are the most suitable herbicides for this application method and dyes are highly recommended to ensure adequate coverage. It is effective on most invasives and undesirable tree species but will produce increased mortality the thinner the target species bark is.

Figure 5. Basal Bark method of herbicide application.

Steve Manning, Invasive Plant Control, Bugwood.org.

Prescribed Burning

Prescribed burning can be a useful tool in aiding in the reduction of invasive species. Most species are not fire tolerant like many native species are. Prescribed fires are conducted by establishing firebreaks around a pre-determined burn unit and then conducting a burn on the

area. Prescribed burns are not enough on their own and will require follow up herbicidal treatments. Landowners should consult professionals when planning and implementing prescribed burns. Please see more information on prescribed burning on the prescribed burning and firebreak establishment section.

Figure 6. Rx burn targeting undesirable species including bush honeysuckle.

The End Result

Treating invasive species will never truly end, however, reducing them from your property is a rewarding process that will have incredible long-term benefits across the landscape. In forests, an increase in biodiversity will follow as spring ephemeral wildflowers reemerge, better browse is made available for wildlife and desirable trees begin to regenerate. Retreatment will always be necessary as new infestations and invasive species emerge over time, but the process will get easier if landowners stay engaged in managing their property.

Other Useful information is available at:

http://web.extension.illinois.edu/forestry/home.html
http://www.il.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1081640.pdf
https://woodyinvasives.org/management/