Landowner Name:

Vermont NRCS – Invasive Plant Control Landowner Acknowledgment February 2021

Background: This landowner acknowledgment and informational sheet is intended to give landowner's a clear understanding of exotic invasive plant control and expectations over the long term. NRCS and partners have determined that landowner understanding and commitment to their invasive plant control project is perhaps the most important element to having success. As a landowner, you will need to read and understand this document to be able to move forward successfully with your application to NRCS for Invasive Plant Control funding assistance.

Exotic Invasive Plants: Exotic invasive plants are not native to Vermont or even North America in most cases. They typically exhibit rapid growth, produce abundant seeds with high germination rates and can displace native vegetation in our natural and managed areas. Many of these "invasive plants" are found throughout Vermont and are posing problems for farmers, foresters, sugarmakers and land managers.

It is the aggressive nature of these plants (rapid growth, abundant seeds, etc.) that make them difficult to control. Many landowners have weeded a garden but not many have tried to take on these "weeds" that invade fields, natural areas and forests. It is a long-term commitment to have meaningful control and it takes a dedicated landowner to see the management through to success.

Major Invasive Plants of Vermont: If you are planning some invasive plant control work on your property there are both woody and herbaceous invasive plants that you may discover. Some of the most common woody species in Vermont include the buckthorns, exotic bush honeysuckles (note, there are native honeysuckles), barberries, multiflora rose, oriental bittersweet (vine) and autumn olive. Some of the commonly encountered herbaceous invasive plants include Japanese knotweed, garlic mustard, goutweed, chervil, wild parsnip and black swallowwort (vine).

Control Approaches: Herbicides are used frequently for invasive plant control projects as they are designed to move or translocate through the plant tissues and kill the entire plan including the root. This saves time and money compared to approaches involving repeated cuttings which often meets with very limited success. These plants thrive on disturbance and readily sprout back. Non-herbicide approaches (such as hand pulling) can make sense as part of an integrated pest management system. These approaches work best for initial infestations when the plants are small or during the maintenance stage of your invasive plant control plan. For instance, you may have the invasive plants treated with herbicides on your land and then use hand pulling to get seedlings that may have been missed or that have grown since the treatment. Walking your woods and looking for new invasive plants is part of your long-term maintenance of the control program.

Application of Herbicides: Herbicides and Pesticides in Vermont are regulated by the Environmental Protection Agency (EPA) at the Federal level and by the Vermont Agency of Agriculture, Food and Markets (VAAFM) at the state level. The VAAFM provides testing and

certification for Pesticide Applicators that are allowed to apply herbicides and/or pesticides in Vermont. Technically, landowners are allowed to apply some but not all herbicides to lands they own in Vermont. Restricted use herbicides, commonly used for invasive plant control in Vermont, cannot be purchased without being a Certified Pesticide Applicator. Due to the potentially hazardous nature of herbicide use and to ensure better invasive plant control project success, NRCS in Vermont requires that a Certified Pesticide Applicator treat invasive plants through our programs. If you are interested in more about understanding product labels, herbicide use and laws in Vermont see the following document - http://efotg.sc.egov.usda.gov/references/public/VT/Label-Information_and_example-label.pdf.

Herbicide Treatment: Different herbicides work in different ways to kill the plant. Regardless, the result is brown vegetation (where there used to be green vegetation) which can be surprising to some landowners. Generally, these areas will soon fill back in with native vegetation as intended so long as invasive plants are kept under control. A common herbicide treatment approach is foliar spot spraying using a backpack sprayer. Foliar treatments generally involve wetting the vegetation with a mixture of water and small amount of herbicide (~2-5% solution). Another common approach for larger woody stems is to cut the stem near the ground and apply a more concentrated amount of herbicide (~50-100% solution) to only the cut stump ("cut stump" treatment). In both cases herbicide will move through the plant tissue and should kill the root.

Example of brown foliage of multiflora rose following a foliar treatment

What You Should Expect: While no two invasive plant control projects are the same there are some similar themes and things to expect. If you received a NRCS contract to treat invasive plants, then likely you will have a good amount of invasive plants on your property. Herbicides will most likely be used and NRCS requires that you use a Certified Pesticide Applicator with Category 2 (Forest Pests) to do the work. Most projects typically involve treating woody invasive plants in woodlands. You may have some large and small invasive shrubs that will likely be foliar sprayed and/or receive a cut stump treatment. Typical costs for applicators run from $200-$300 an acre. But, dense areas or extensive amounts of larger stems requiring cut stump treatment (which is costly) may raise this cost significantly. It is a good idea to get estimates for the work. NRCS has a set payment rate depending upon the degree of infestation.

NRCS can assist landowners with multiple treatments as is usually required for invasive plant control. As one might expect, the initial treatment is generally the most difficult and costly but follow up treatments still will entail plenty of work and cost. Follow-up treatments may be more involved in places where there are large invasive plants or populations that have been producing seed for a long period of time. There may be a viable seed bank that will need to be exhausted. When the large plants are treated and killed, this provides more sunlight to the forest floor and allows for greater germination and growth rates for new seedlings. These may be seen initially in the first growing season after control, but it may be more evident during the 2nd growing season. It should be noted that numerous follow up treatments are necessary for problematic species such as Japanese knotweed, swallowwort, bittersweet and others.

Large common or European buckthorn cut stump treated in fall of 2010. New seedlings are taking advantage of sunlight – picture from late summer 2012 in 2nd growing season beneath cut stump tree.

Often, follow-up treatments would be completed with a foliar spot treatment which is especially useful in situations like that pictured above; a carpet of seedlings that are easily sprayed. Hand pulling is another option, but it may only work well where new seedlings are sparse. For any invasive plant treatment, there will be plants missed by the applicator. NRCS expects that most of the invasive plants on site at the time of treatment are killed. Follow-up herbicide treatments funded by NRCS will also require a Certified Pesticide Applicator. Landowners can and should continue with the control work in the long term.

A Caution on Landowner Use of Herbicides: As noted earlier, landowners can purchase and use non-restricted use herbicides on lands that they own. An example is glyphosate-based products such as "Roundup". While it may be legal to do this, NRCS and partners encourage landowners to become as educated as possible about herbicide use and potential dangers before using them. First and foremost, you must read and understand the label on the herbicide – it is the law. The label outlines most of what you need to know as far as the dangers, personal protective equipment (PPE), where and how it can be applied, pests it can address, rates of application, etc. Pay close attention to be sure that the type of site where control work will take place is listed on the label. While Roundup (active ingredient Glyphosate) is considered generally safe, it should be noted that it does have surfactants (additives to allow better application and absorption into foliage) that can be deadly to aquatic species should it reach water. Ironically, the aquatic safe versions of roundup (without surfactant) are restricted use so only a Certified Pesticide Applicator can purchase and use them. This is another good reason to seek out and use Certified Applicators. See the following for more info: http://efotg.sc.egov.usda.gov/references/public/VT/Label-Information_and_example-label.pdf.

Maintenance Stage: Finally, after you have these invasive plant populations down to a manageable level, you should be prepared to monitor your property into the future. This involves learning to spot these plants as they may appear and to learn new invasive plants that may be in your neighborhood. This process can be as simple as pulling up an invasive plant encountered when you are out cutting firewood or during your daily walk in the woods. But it is important to get to all parts of your land – even those areas that don't have great access. Also, be cautious about bringing in mowing or other equipment that may carry in weed seed to the property. Consider requiring that such machinery is washed to reduce the risk of a new infestation.

You will need to be vigilant and proactive to keep these plants at a manageable level that will allow you to enjoy your land, improve wildlife habitat, improve forest health and allow for good forest management.

Additional Resources for Invasive Plant Identification and Management –
Vermont Invasives - http://www.vtinvasives.org/