

## **Invasive Plant Control Practice Plan – [REDACTED], [REDACTED]**

[REDACTED] & [REDACTED]

[REDACTED] Rd.

[REDACTED], ME [REDACTED]

Tax Map & Lot: 7-28-1

March 2020

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### **Property Overview**

[REDACTED] Farm, owned by [REDACTED] and [REDACTED], consists of ~ 68 acres of woodland and field that extends in a westerly direction from the [REDACTED] Road. The property abuts [REDACTED] Park to the west and other privately held woodlands to the south and north. The field and homestead area consists of ~ 5 acres and is located along [REDACTED] Road. The field is mowed annually to provide grassland habitat for wildlife. The remainder of the property, ~ 63 acres, is forested, mostly consisting of mixed hardwood/softwood stands with a white pine stand to the west of the field and homestead. Only the ~63 acres of woodland are considered to be the Eligible Acres/Surveyed Area for this plan (see Map 2). The easterly portion of the woodlot was harvested in 2008 by the prior owners. At the date of the survey, consulting forester [REDACTED] of [REDACTED] was preparing a forest management plan for the property. Initial field results and recommendations were shared with [REDACTED] to inform that plan as well as to support an application for cost-share assistance from the Natural Resources Conservation Service through their EQIP Program.

### **Survey Description and Summary of Survey Effort**

Two staff members of the Somerset County Soil & Water Conservation District visited the property on August 6, 2019, spending a total of 10 hours (5 hours per staff member) surveying the woodlands and field edges (see Map 2). This was an extensive search of the property in a grid pattern, with a greater level of evaluation in areas of concern identified via information provided by the landowners. [REDACTED] joined us for the duration of the survey to observe our methods, understand the locations of invasive plant species found, and provide assistance in locating areas of concern previously noted.

### **Description of Invasive Plants Found**

Five nonnative invasive species of concern were found: burning bush (*Euonymus alatus*), shrubby honeysuckle (*Lonicera spp.*), Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), and Japanese knotweed (*Fallopia japonica*) (see Map 3 and Table1). These invasive species have the potential to suppress tree recruitment and growth in

forests, crowd out beneficial native plants, reduce wildlife habitat quality, and generally be a nuisance during property maintenance. Burning bush and multiflora rose were found in low abundance (Maps 7, 8). Shrubby honeysuckle and Japanese barberry were at medium abundance (Maps 4, 6) but confined to an approximately 23-acre area of the woodlot. Japanese knotweed (Map 5) exceeded the threshold for low abundance but remains a manageable level of infestation. Except for an isolated shrubby honeysuckle that was removed during the survey, no invasive species occurrences were documented in the back portion of the woodlot.

Table 1. Invasive plants found at [REDACTED] Farm, 2019 (see also Maps, attached)

Common name	Scientific name	Growth form	Level of infestation	Areas where found
Burning bush (aka winged euonymus)	<i>Euonymus alatus</i>	Woody shrub	Very Low: 2 isolated plants	Just into the woods north garden/orchard area near [REDACTED] Road, and in the yard (Map 7)
Japanese barberry	<i>Berberis thunbergii</i>	Woody shrub	Medium-High	Scattered throughout 23-acre portion of the woodlot, and along the field edge (Map 6)
Japanese knotweed	<i>Fallopia japonica</i>	Perennial tough herb	Medium	Three patches along [REDACTED] Road, one patch on north boundary (Map 5)
Multiflora rose	<i>Rosa multiflora</i>	Woody shrub	Low: isolated occurrences	Isolated occurrences in woodlot and along field edge (Map 8)
Shrubby honeysuckle (aka Morrow's and/or Tartanian honeysuckles)	<i>Lonicera spp</i>	Woody shrub	Medium-High	Widespread and common in 23-acre portion of the woodlot and along field edge. Polygon A has higher density of older-aged clumps than Polygon B. An isolated occurrence was located and removed near the SW boundary. (Map 4)

## **Explanation of prioritization strategy**

Invasive plants are not all equally threatening. Prioritization strategies are helpful because it is not usually realistic to remove every invasive plant from every acre of land. The highest priority is prevention – keeping new species out. When a timber harvest is planned, invasive plant removals in that area may take next precedence due to the exacerbating impact timber removal can have on invasive plant spread. Otherwise, our invasive plant management recommendations follow a three-tiered prioritization:

1. Early Detection and Rapid Response (EDRR) to eliminate species which are new to the area or only present in small patches. Goal is eradication from the site. Hopefully can be achieved with work over a short timeframe (several years). Best return on investment – an ounce of prevention is worth a pound of cure! Nip it in the bud now while you still can.
2. Early Management to control patches of widely-dispersed, common invasive plants within the matrix of uninvaded habitat. Goal is to expand “clean” habitat and prevent it from being re-infested through monitoring over time. This is ongoing maintenance work that needs to be repeated every several years (2-5 year interval). Areas of special concern (intact forest blocks, rare/exemplary features, and special wildlife habitats) may be targeted first or more often.
3. Suppress and Contain areas of dense infestation. Goal is to reduce the spread of seeds or other plant propagules. This is ongoing maintenance work that is repeated every several years or as resources permit. Infestations near areas of special concern may receive more frequent or more intense attention.

## **Prioritized management recommendations (1 = highest priority)**

The treatment suggestions outlined here are considered highly effective approaches to the specific infestations found. Other options may also be effective or preferable in certain scenarios. Contact Somerset County Soil and Water Conservation District with questions or for further discussion. Please read and follow all label instructions if using herbicide; **The Label is The Law.**

1. Review ways that new plants might arrive and be vigilant.

GOAL: Prevent new invasions.

In the back (western) portion of the woodlot, annual surveys by the homeowner to locate and remove any new sprouts of invasive species are highly recommended.

Require that equipment (e.g., logging, earth-moving) be cleaned before it comes to your property. This will remove seeds or plant fragments which could otherwise spread from the last job to your property. Also, be careful with fill, hay, or mulch – all these can carry weed or invasive plant seeds. Monitor any areas where fill, hay, or mulch are applied for 1-2 years afterwards, to make sure nothing undesirable sprouts.

2. Be proactive before you harvest timber.

GOAL: Minimize post-harvest invasive plant species invasion

In the late spring before the planned harvest, the planned harvest area should be surveyed for the presence of invasive plant species. Any invasive plant species found, especially larger individuals, should be treated either by mechanical methods, chemical methods, or a combination of these methods (see below for information on control methods). This will decrease the potential spread of the invasive plant species after the disturbance of harvest operations. Additionally, it is suggested that an invasive plant survey be conducted two to four years after the timber harvest has concluded to determine if further colonization of the invasive plant species is occurring.

3. Eradicate species in low abundance.

GOAL: Eliminate Multiflora rose (*Rosa multiflora*) and Burning bush (*Euonymus alatus*) while it is still relatively simple to do so. These species were found at low to very low levels on the property, and effective control remains feasible.

**A. Multiflora rose** (*Rosa multiflora*) was documented in several locations, particularly along the field edge (Map 8). A variety of age classes were present in isolated occurrences. It should be relatively simple to eradicate from the property with modest investment of time and resources. Left untreated, it will spread and become a larger infestation that will be much more difficult to control.

Suggested Treatment: In general, repeated manual cutting can work, if this is regularly followed-up to cut back re-sprouts. Herbicide treatment is not recommended in this location. Cut/mow the shrub to ground level in early summer during flowering and repeat this 3-6 times through the season. It may be necessary to continue this regime for several years. Homeowner should watch for young plants in the vicinity of these established plants and pull them before they become established.

**B. Burning bush** (*Euonymus alatus*) was documented in two locations (Map 7). An established shrub in the yard planted by the homeowner several years ago, and a second, younger plant just inside the tree line. If not controlled, burning bush will spread by root sprouts and through seed dispersal by birds, who consume the berries.

Suggested Treatment: In general, repeated manual cutting/pulling can work on isolated plants, if this is regularly followed-up to cut back re-sprouts. Larger plants

may need to be cut, but re-sprouting will occur. Persistent cutting or mowing multiple times during the growing season over several years may kill the plant, but diligence is required. Homeowner should watch for seedlings in the vicinity of these established plants and pull them immediately.

4. Suppress infestations of more abundant and widespread species.

GOAL: Release native forest trees and understory plants from competition and improve wildlife habitat by suppressing growth, while recognizing that a significant seed bank exists and eradication is unlikely.

From the survey several locations on the property were identified that would benefit from removal or containment of shrubby honeysuckles (*Lonicera spp*), Japanese knotweed (*Fallopia japonica*) and Japanese barberry (*Berberis thunbergii*) that, if left untreated, would have continued negative impacts to forest and ecological health. The attached Maps 4, 5 and 6 highlights these areas.

**A. Shrubby honeysuckle (*Lonicera spp*) and Japanese barberry (*Berberis thunbergii*):**

Widespread infestations of Japanese barberry and shrubby honeysuckle threaten forest tree regeneration and reduce the wildlife habitat value of the forest understory. These woody shrubs are shade tolerant and can compete and come to dominate the forest understory, interfering with forest succession. These species are largely restricted to an approximately 23-acre portion of the woodlot and along the field edge (see Map 4, Map 6). As shown on Map 4, in Polygon A shrubby honeysuckle occur in relatively higher density and with a greater number of older-aged clumps than in Polygon B, where abundance is significantly less, and plants tend to be younger.

Suggested Treatment: In the woodlot area where shrubby honeysuckle and Japanese barberry are common, it is unrealistic to expect to be able to find and kill all plants once this level of infestation is reached. However, an intense bout of treatment can kill large plants, buying time for the forest to grow and develop relatively free from invasive plant pressure. Repeating the treatment once every ~5-10 years, or when invasive shrubs again come to be noticeable, can help achieve forestry objectives while also improving conditions for wildlife.

We recommend the following order of treatment effort:

1. Focus first on treatment (combination of mechanical and chemical control) of Japanese barberry as shown on Map 6 and the shrubby honeysuckle in the area noted on Map 4 as Polygon B.

2. The next round of treatment should be directed at the larger shrubby honeysuckles in the area noted on Map 4 Polygon A.
3. The last round will aim to control the remaining shrubby honeysuckles in Map 4 Polygon A.

Successful suppression of these widespread infestations will probably require herbicide treatment as some plants are large and the area infested is significant. We recommend hiring a licensed professional herbicide applicator. If undertaken by the homeowner, all precautions should be followed – see below for a discussion on herbicide treatment and refer to the species factsheets included with this report.

**B. Japanese knotweed (*Fallopia japonica*):**

Infestations of Japanese knotweed are not yet severe but are beyond the “low” stage (see Map 5). Stands were documented along [REDACTED] Road (3) and on the north boundary (1). The occurrences along [REDACTED] Road are of highest priority as any future road ditch work will spread the infestation. An extensive stand of Japanese knotweed is located off the property, on the opposite side of the road. This will continue to provide a source of plant material generating new infestations; therefore, ongoing management will be required.

Suggested Treatment: Smaller patches can be cut repeatedly throughout the growing season, for several years until the roots are exhausted. As Japanese knotweed readily sprouts from clippings, plant debris should not be moved to other parts of the property. If herbicide treatment is selected, avoid use during flowering as bees are attracted to this species. Removal will take persistence and patience over many growing seasons, no matter the control option used.

**Notes on Using Herbicide**

Successful suppression of widespread infestations will probably require herbicide treatment as some plants are large and the area infested is significant. As mentioned, we recommend hiring a licensed professional herbicide applicator, or obtaining a basic license yourself. The method that uses the least amount of herbicide molecules is foliar treatment using low concentration herbicide solutions. For larger shrubs too tall to spray (the leader must be sprayed or the treatment will not succeed; it is also dangerous to spray over your head), a basal bark or cut stump treatment may be used, but this requires much more concentrated solution and can actually use more molecules of active ingredient than a dilute foliar spray. In general, foliar spray is the most effective method of treating shrubs and trees with small diameter stems.

Glyphosate or triclopyr are the most commonly used herbicides for invasive plant control; triclopyr works best in the spring/early summer when plants are actively growing, while

glyphosate works best in mid-late summer when plants are sending materials down to the roots. Glyphosate and to a lesser extent triclopyr are available in forms you can purchase commercially. Many formulations are only available for purchase by licensed applicators. A combination of both is sometimes used. Both herbicides are short-lived and not mobile in soil. As with any herbicide, proper technique is required to minimize collateral damage and ensure applicator safety.

Pay close attention to the herbicide concentrations listed in the product label, the required personal protective equipment, and the timing of application. What works in early summer may not work in late fall. Do not spray plants when they are flowering as insects may be visiting. Do not use herbicide during a drought as plants will not take up the product well and it will not be effective. Also, remember that with herbicide use, more is not always better – use the minimum recommended concentration first and see if it does the job. Note also that some herbicides may require the addition of a surfactant (often true for foliar applications). As always, ***read the label carefully*** and know the regulations before undertaking any herbicide use, even if you have hired a licensed applicator.

**NOTE! Removal of invasive plants in the shoreland zone or in wetlands (a) may require DEP permits and (b) should be done in consultation with the town Code Enforcement Officer as municipalities may have additional regulations.**

**Herbicide treatments in or within 25 feet of a wetland, stream, river, lake, or pond may require a) DEP permits, b) an applicator's license, and/or c) a variance from the Maine Board of Pesticides Control.**

**Invasive plants to watch out for (not found but appropriate habitats are present)**

Asiatic bittersweet

Autumn olive

Black swallowwort

Garlic mustard

Common buckthorn

Glossy buckthorn

Norway maple (in or near woods esp. near roads and dwellings)

Ornamental jewelweed

*Phragmites* (common reed) (in wet areas)

Purple loosestrife (in wet areas)

**Table 2. Five Year Suggested Management Timeline**

<b>Year</b>	<b>Task</b>	<b>Time of Year</b>	<b>Responsible Party</b>
<b>2020</b>	<b>Mechanical treatment of Japanese knotweed clumps.</b>	<b>Repeat monthly during growing season</b>	<b>Landowner</b>
<b>2021</b>	<b>Herbicide treatment by licensed applicator. Foliar, basal bark, and cut-stem treatment on all invasive species identified.</b>	<b>During the growing season with exact timing TBD based on treatment method(s) and active ingredient(s) utilized</b>	<b>Licensed Applicator</b>
<b>2022</b>	<b>Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants.</b>	<b>Monitor in growing season</b>	<b>Landowner</b>
<b>2022</b>	<b>Assess the success of herbicide treatment in 2021. Re-treat any re-sprouts.</b>	<b>Monitor in growing season. Treatment during growing season.</b>	<b>Landowner or hired contractor</b>
<b>2023</b>	<b>Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants.</b>	<b>Monitor in growing season</b>	<b>Landowner</b>
<b>2024</b>	<b>Monitor all invasive plants previously treated. Monitor remainder of property for presence of invasive plants.</b>	<b>Monitor in growing season</b>	<b>Landowner</b>

**Where to find more information about these invasive plant species**

Invasive plant web gallery with identification and control information:

[https://www.maine.gov/dacf/mnap/features/invasive\\_plants/invasives\\_gallery.htm](https://www.maine.gov/dacf/mnap/features/invasive_plants/invasives_gallery.htm)

GoBotany, an excellent place to see additional pictures of the plants:

<https://gobotany.nativeplanttrust.org/>

Maine Board of Pesticides Control (resource for questions about herbicide use, rules and regulations), also can contact them at 287-2731 and [pesticides@maine.gov](mailto:pesticides@maine.gov)

<http://www.maine.gov/dacf/php/pesticides/index.shtml>

**List of maps (attached)**

- Map 1. Property boundary
- Map 2. Surveyed Acres and Search Route
- Map 3. All Infestations
- Map 4. Occurrence of Shrubby Honeysuckle
- Map 5. Occurrence of Japanese Knotweed
- Map 6. Occurrence of Japanese Barberry
- Map 7. Occurrence of Burning Bush
- Map 8. Occurrence of Multiflora Rose

**About the data shown on the map(s)**

The map(s) included with this report show locations of invasive plants that we observed during our site visit. All these invasive plant data are stored in iMapinvasives (“iMap”), an online mapping program and database. More detailed information about each point or shape is available by getting an iMap account and logging in. Once logged in, navigate to your property and turn on data. In iMap points and shapes are called “presences.” Shapes cover more area and hold more detailed information. For more information about iMap, or to request an account, visit [www.imapinvasives.org](http://www.imapinvasives.org).

***Attachments***

*Survey photos*

*Maps 1-8*

Survey Photos  
[REDACTED] Farm  
August 6, 2019



*1 Isolated burning bush just inside tree line from gardens/orchard area*



2 One of three stands of Japanese knotweed along [REDACTED] Road



3 *Multiflora rose* near the northern boundary



*4 Japanese barberry is common in the understory of much of the woodlot*



*5 Shrubby honeysuckles of all age classes present in the field edge and throughout much of the woodlot*