



## Exotic Shrubs

### Description

- Refer to the DCNR Invasive Exotic Plant Tutorial (<http://www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm>) pages for 19 invasive shrubs, including:
  - Japanese barberry (*Berberis thunbergii*)
  - autumn olive (*Elaeagnus umbellata*)
  - privets (*Ligustrum spp.*)
  - shrub honeysuckles (*Lonicera spp.*)
  - multiflora rose (*Rosa multiflora*)
- As a group, they are adapted to a wide range of habitats, and plague almost every plant community type worth protecting.
- The exotic shrubs tend to leaf out sooner and drop their leaves later than native shrubs.
- None of these shrubs sucker (produce new shoots from their roots).

### Management Keys

The exotic shrubs that plague Pennsylvania are not difficult to control. They are prolific, and there are usually too many of them. However, compared to other species, they are not hard to kill.

#### Target the 'Tops'

None of the problem shrubs are suckering (root sprouting) species. If you effectively treat the top of the plant, the roots will die.

#### Timing Flexibility

Because they leaf-out early and drop their foliage late compared to most native woody species, and do not sprout from their roots, you have a longer operational window to manage exotic shrubs compared to rhizomatous or root-creeping species. Foliar treatments are an option for most species from June into October. Stem treatments can be done all year, weather permitting.

#### Foliar Treatments

Typically, you will have several of the shrub species present on your site. These species vary in their response to different herbicides, so it is important to use a treatment that is effective against all of the species. Use a mixture of herbicides to provide a broad spectrum of control.

A mix we like for shrub treatments is a mixture of *glyphosate* and *triclopyr*. We mix these at a 2:1 ratio, targeting 3.0 lbs *glyphosate*-acid per acre and 1.5 lbs *triclopyr*-acid per acre. This mix is non-selective, but has practically no soil activity, and both herbicides are available as aquatic-labeled products. Case in point – *glyphosate* alone will provide effective control of Morrow's honeysuckle (*Lonicera morrowi*), but provides little control of autumn olive (*Elaeagnus umbellata*); and *triclopyr* is very active against autumn olive but ineffective against honeysuckle. The mixture of *glyphosate* and *triclopyr* is effective against both species.

#### Stem Treatments

Stem treatments are effective against the exotic shrubs, and you can implement them throughout the year, giving you scheduling flexibility. The two most useful options are basal stem treatment, and stump treatment.

Basal stem treatment uses a concentrated mixture of the herbicide *triclopyr* in oil that is applied to the entire circumference of the lower 8 to 18 inches of the stem, depending on its size. 'Pathfinder II' is a ready-to-use *triclopyr* product available on the Pennsylvania statewide herbicide contract.

If you want to remove the topgrowth of the shrubs, the preferred approach would be cutting the stems close to the soil line, and treating the stump. 'Pathfinder II' is effective for this treatment. You can also use *glyphosate*, or the water-soluble, amine formulation of *triclopyr* ('Garlon 3A') in a 1:1 mixture with water. The oil-based 'Pathfinder II' can be applied anytime after cutting, while the water-based treatments needs to be applied as the stems are cut.

#### Mechanical Control

Small infestations of small plants - particularly the shrub honeysuckles, multiflora rose, and barberry - can be pulled by hand effectively. Autumn olive is comparatively well rooted and is difficult to pull.

Mowing effectively eliminates the shrub canopy, and eliminates the need to drag and chip or burn the stems after cutting.

Resprouting is often suppressed after mowing



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because the beating the stump receives during the mowing often kills the stem tissue. This will depend on shrub size and species. Larger shrubs will tend to suffer more damage this way, while smaller plants are more likely to be cut somewhat cleanly, and will therefore resprout more vigorously.

Mowing should be followed with an herbicide application to eliminate the resprouts. Foliar applications are easier than stump (stubble?) treatments because the targets are easier to find, and treating knee-to-waist high resprouts with a backpack sprayer is a relatively quick process.

Figure 1. The management calendar for exotic invasive shrubs is quite flexible because the foliage comes early and falls late. Stem treatments to intact or cut stems provide a year-round window of opportunity.

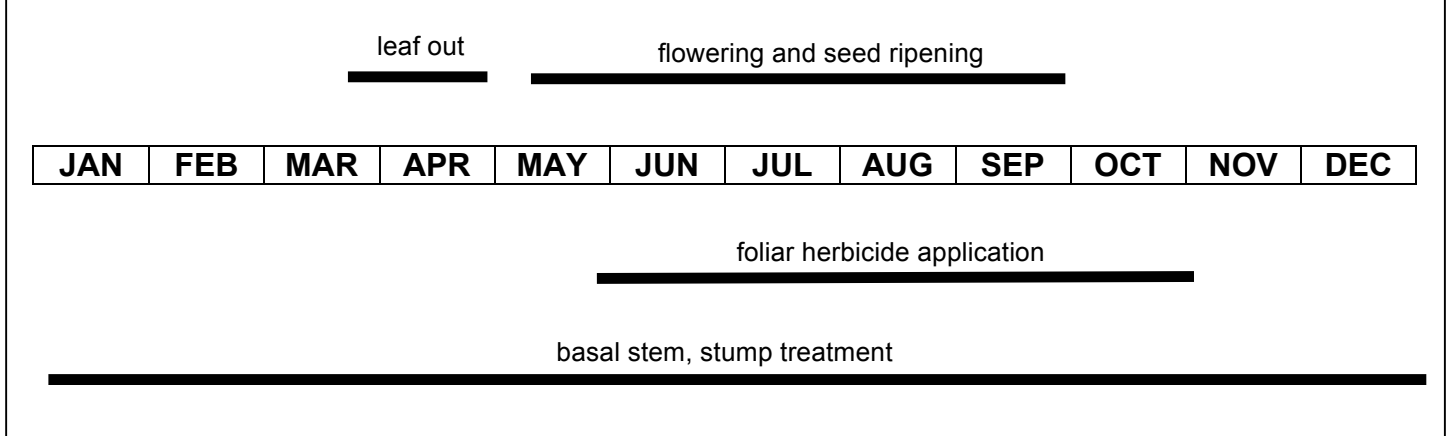


Table 1. The invasive shrub 'complex' that plagues Pennsylvania can be treated throughout the year. These shrubs leaf out early and drop their leaves late, providing a long foliar application window. Basal stem and stump treatments can be made anytime the weather permits.

timing	treatment	product rate	comments
June to onset of fall color	'Aquaneat' plus 'Garlon 3A' plus surfactant	3 qts/ac plus 1.5 qt/ac	This combination of <i>glyphosate</i> plus <i>triclopyr</i> is effective against a broad spectrum of woody species. Additionally, this mixture reduces risk to non-targets because it has practically no soil activity, and the herbicide products are aquatic-labeled.
year-round	'Pathfinder II'	ready-to-use	'Pathfinder II' is a <i>triclopyr</i> -in-oil mixture for basal stem and stump treatment. Basal stem applications wet the entire circumference of the lower 8 to 18 inches of the stem, without running off. Stump treatments can be made anytime after cutting, and should cover the outer edge of the cut surface and the bark of the stump. An oil-soluble dye should be added to improve tracking and avoid skips and double-treating.
year-round	'Aquaneat' or 'Garlon 3A'	1:1 mix with water	'Aquaneat' is an aquatic-labeled <i>glyphosate</i> product, and 'Garlon 3A' is an aquatic-labeled <i>triclopyr</i> product. These can be used for stump treatment, and would be the best choice working near water or in wetlands. Unlike the oil-based 'Pathfinder II', this water-based treatment must be applied as soon as the stems are cut. A water-soluble colorant should be added to improve tracking and avoid skips and double-treating.

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