

Appendix C

HERBICIDE APPLICATION METHODS

PES will utilize three methods of herbicide application: foliar treatment, cut stump and basal stem treatment. Descriptions of selected strategies follow:

Chemical (Herbicide Applications) Control

1. Foliar Treatments: the selective application of herbicides, diluted in water, to the foliage of target vegetation. Foliar applications are conducted once leaves are fully developed in the spring until early fall, when leaves begin dropping. Two types of equipment are used for foliar treatments: low volume and high volume. Both treatments use low pressure (below 60 psi at the nozzle) for applications.

a. Low pressure foliar treatments using a hand pump, motorized sprayer or squirt bottles. The herbicide solution is applied to lightly wet the target plant not to the point of run-off. This technique is excellent for spot treatments such as localized woody invasive plants. It is not effective on tall, high-density target vegetation.

b. Low pressure foliar treatments using truck, utility vehicle, or tractor-mounted application equipment. A tank and pump is fitted on the application vehicle, and a water-based herbicide mixture is delivered through nozzles attached to a hose or boom-mounted equipment. The goal is to thoroughly wet the target vegetation. This technique is used where invasive plants are very dense or impenetrable. This technique will not be used widely at Greylock Glen (<5% of area). We foresee using it only in areas of very dense bittersweet.

2. Drift control: Anti-drift adjuvants are added to the herbicide mixes in all foliage and pre-emergent applications because they help reduce the potential exposure to non-target organisms, reduce the break-up of sprays into fine droplets and increase selectivity and herbicide deposition onto target plants.

3. Cut Stump Treatment (CST): the mechanical cutting of target species followed by an herbicide treatment to the phloem and cambium tissue of the stumps. CST treatments prevent re-sprouts, thereby reducing the need to re-treat the same vegetation. The CST mixture is diluted in water or in a non-freezing agent and ideally is applied to freshly cut stumps. Application equipment includes low-volume backpack hand-pump sprayers, hand-held squirt bottles, paintbrushes, and/or sponge applicators.

This method is used where maximum control is desirable, to reduce the visual impact of vegetation management treatments and/or to reduce the potential of adverse impacts to desirable vegetation because of its selectivity. CST may be used at any time of the year provided snow depths do not prevent cutting the stumps below three inches in height. It is not recommended for

use during the season of high sap flow, or in moderate to heavy rains. The method is not practical for moderate to heavy stem densities.

4. Basal Treatment: the selective application of an herbicide, diluted in specially formulated oil, to wet the entire lower twelve to eighteen inches of the main stem of target plants. Using a hand pump backpack unit, the oil enables the herbicide solution to penetrate the bark tissue and translocate within the plant. An extremely selective technique, basal treatments are used either when vegetation density is low, or in areas where extreme selectivity is necessary. It is the primary treatment option for invasive species control in public ways. It can be used any time of year except when snow is too deep, in extremely wet weather and/or during spring sap flow.

