Pesticide Application Plan (Fall 2023)
Control of Hemlock Woolly Adelgid at Hearthstone Campground

A. PURPOSE/TARGET SPECIES

This insecticide application is intended to kill the invasive insect pest Hemlock Woolly Adelgid (HWA), to protect treated Eastern hemlock trees from attack by HWA for five or more years, and to slow the proliferation and spread of HWA into nearby forests. HWA is a highly invasive and destructive pest of Eastern hemlock (Tsuga canadensis) and Carolina hemlock (T. caroliniana). It is ranked high (Relative Score = 76.00) under New York's Non-Native Animal Species Assessment Process and is listed as prohibited under 6 NYCRR Part 575. HWA is spread by wind, birds, and the movement of infested host material (firewood, nursery stock, etc.) by humans. Lacking predators in its non-native range, HWA can cause hemlock decline and mortality within four to twenty years. Trees growing under stressful conditions (drought, poor site, etc.) will succumb more quickly to the insect. In addition, this insecticide application is intended to kill Elongate Hemlock Scale (EHS) in one area of the campground that is known to be infested by that pest. EHS is an invasive insect that causes additional stress to trees infested by HWA.

B. LOCATION & DESCRIPTION OF APPLICATION SITE

The application site is Hearthstone Campground, A DEC property, located in the town of Lake George in Warren County (see Figure 1). The treatment area itself will consist of an area of less than 40 acres, and no greater than 10,240 diameter inches of hemlock trees shall be treated.

C. PESTICIDES SELECTED FOR USE

1. Lesco Bandit 2F, EPA Reg. No. 432-1312; Doc. ID. 538136

Lesco Bandit 2F EPA Reg. No. 432-1312 with 2(ee) recommendation for basal bark application to control Hemlock Woolly Adelgid in Eastern Hemlock; Doc. ID. and 545660

2. Imajet, EPA Reg No. 74578-6; Doc. ID. 548266.
3. Safari 20SG, EPA Reg. No. 86203-11-59639, EPA SLN No. NY-120009

D. ANTICIPATED APPLICATION EFFECTS

Significant reduction or elimination of the target species to maintain the health of Eastern hemlock, an ecologically important species in the area. Imidacloprid will provide residual protection (up to seven years) from future invasion.

E. METHOD OF APPLICATION

Trees to be treated within the application area will be marked in advance by DEC staff. The application site is divided into one-acre grids to accurately track the total amount of product applied per acre and stay within the manufacturer's limits. Insecticides will be applied to infested trees (to reduce or eliminate existing adelgid populations) and nearby uninfested trees (to provide long-term protection from HWA). They will be applied onto the bark of selected hemlock trees, or directly injected into the trunk of selected hemlock trees, according to the product labels and manufacturer's safety instructions. If necessary, some trees may be treated via direct injection instead of basal bark application, to avoid using the basal bark application method close to

surface water, and in accordance with pesticide labels. The application will be performed with the on-site supervision of a person holding a New York State Commercial Applicator Permit (Category 9).

F. TIMING OF APPLICATION

During the fall of 2023 (October 18th – November 30th)

G. WEATHER CONDITIONS REQUIRED

For basal bark spray applications: Wind – calm (0-10 mph). No significant rainfall expected within 24 hours after application. No application during rainfall, or when bark is saturated by rain. Direct injection applications may be used during any weather conditions.

H. PERSONNEL REQUIRED

A minimum of one and up to eight DEC staff who are certified pesticide applicators or technicians will be present to perform the insecticide application. Additional personnel and volunteers may be on site to assist with tree marking and data collection. Trees to be treated within the application area will be marked in advance by DEC staff.

I. MONITORING METHODS

Ocular inspection of treated trees and surrounding area, with upper canopy sampling to determine effectiveness as needed.

J. SAFETY PROCEDURES

According to label instructions (attached). Necessary protective clothing such as long-sleeved shirt and long pants, and waterproof chemical resistant gloves will be worn.

K. PUBLIC NOTIFICATION

Warning signs will be posted at the site and along nearby trails. The nearest residences are directly adjacent to the application site. Hemlock trees that are not on DEC property will not be treated. There are DEC campsites at the application site, however the campground will be closed for the season during the application window.

L. POST APPLICATION EVALUATION

A visual inspection of treated trees and surrounding area will be conducted at least one year post-application to gauge treatment effectiveness. If needed, insecticide application rates may be adjusted for future treatments based on monitoring results, in accordance with the product labels. Survey efforts will be continued or expanded in the region for at least three consecutive years.

M. ALTERNATIVE METHODS

1. Treat only with dinotefuran, omit imidacloprid:

Systemic treatment with dinotefuran (Safari 20SG) only is likely to achieve the rapid control of HWA that is desired. However, it would only allow a temporary short-term protection from further infestation by HWA.

2. Treat only with imidacloprid, omit dinotefuran:

Treatment with only imidacloprid offers long term control of HWA, but will not rapidly kill HWA, nor will is control elongate hemlock scale (*Fiorinia externa*), another invasive pest of hemlocks that is present at the campground.

3. Cut and remove or destroy infested and suspected trees:

Mechanical removal of the visibly infested trees is not certain to effect the desired control; as low-level HWA infestations are likely present on neighboring trees, and can be very difficult to detect. There is also a potential risk of moving the pest to new locations if infested materials are moved. Finally, the ecosystem functions and aesthetic benefits of the hemlock trees would be lost.

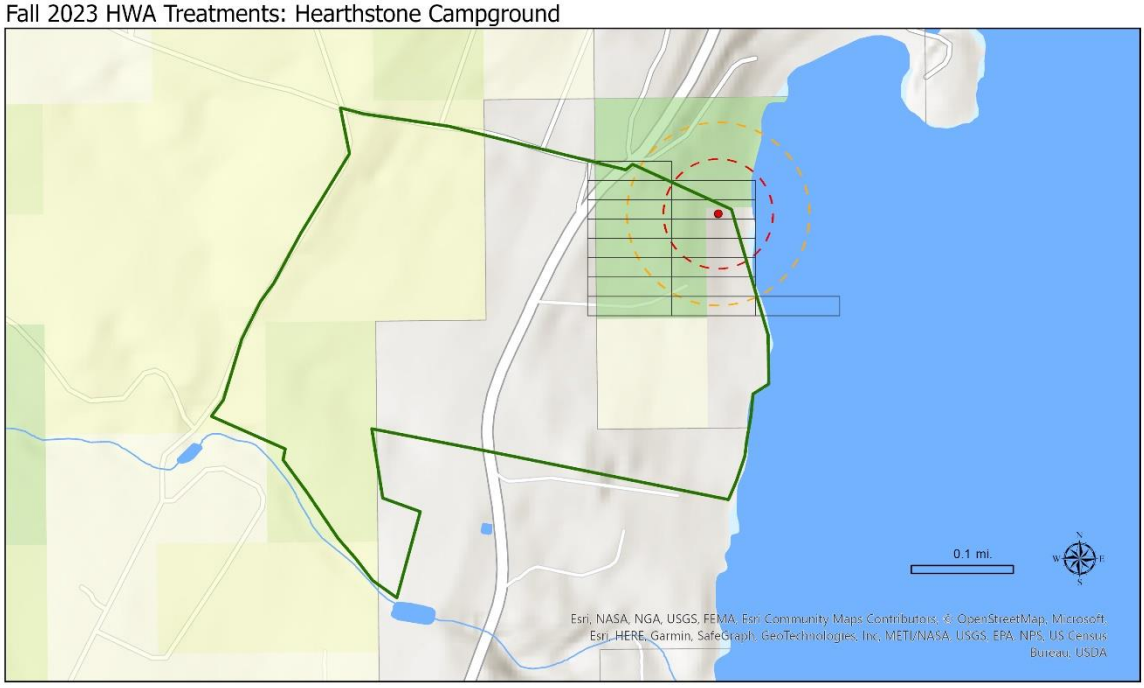
4. Biological control:

Biological controls (or biocontrols) are a potential long-term option for suppression of existing HWA populations. However, biocontrols only afford suppression and are not an effective tool for eradication of small populations. A release of biological control organisms was conducted at this location in the Spring of 2023 and is being monitored for establishment. The use of systemic insecticides at the application site does not preclude the potential for future use of biocontrols at the treatment location and should complement current biocontrol efforts.

5. No treatment:

Without intervention, HWA will continue to exist and spread at Hearthstone Campground, resulting in decline and eventual mortality of infested, untreated Eastern hemlocks. The ecological and aesthetic impacts resulting from such a scenario would be significant.

Fall 2023 HWA Treatments: Hearthstone Campground



Hemlock Basal Area (sq. ft./ac.)

1 - 20
21 - 40
41 - 60
61 - 80
81 - 100
101 - 120
121 - 140
141 - 160
161 - 180
181 - 200
201+

HWA Confirmed
300 ft. Buffer
500 ft. Buffer

Treatment Units
State Land

Site Location

8/30/2023
Bureau of Invasive Species and Ecosystem Health