

# THCP Hemlock Woolly Adelgid Management Checklist

## For Private Landowners

Determine your goals and objectives for your forest as well as for your hemlocks. Treating your hemlocks should be a long term commitment that may involve multiple treatments. Developing a comprehensive forestry management plan is highly encouraged.

### **Steps towards HWA treatment:**

1. Inspect trees to determine level of HWA infestation present: none, light, moderate or heavy.
2. Assess site conditions
  - Terrain -flat, gently sloping, steep, or treacherous conditions.
  - Soil composition-clay, loamy, rich in organic matter, sandy, rocky.
  - Soil moisture-extremely dry (as in drought condition), dry to normal, moderate or wet soils.
  - Amount of underbrush and how much needs to be cut away to access trees.
  - Availability of water supply on property for treatments.
  - Accessibility of trees, including trees on ledges, rock outcroppings or on stream banks.
3. Overall tactic
  - A realistic goal: high level of treatment rather than 100% eradication.
  - Treatment timing: spring or fall is best but should be done as soon as HWA infestation is detected on your property or within 5 miles of your property.
  - Tree selection: if treating every tree is not feasible, select trees to treat based on your values and degree of infestation.
  - What happens if trees are untreated? Trees will die within 3-7 year once infestation starts. Remove untreated or unwanted trees from high risk areas or keep as wildlife snags, if posing no risk to property.
4. Collect tree data
  - Determine diameter (in inches) at breast height (DBH) for all trees that will be treated. You can use a diameter tape or Biltmore stick. You can also use a regular measuring tape to measure the circumference and divide that number by 3.14.
  - Put each DBH in 1 inch size classes. Example would be a 10 inch dbh tree would be in the 10 inch size class.
  - Record all tree information on paper or electronic spread sheet to keep up with records.
  - On large acreages, you may want to organize these areas into Hemlock Conservation Areas to make budget and treatment planning easier.
5. Types of treatment and options for labor
  - Treatment: chemical or biological. Chemical control provides faster results and is more feasible than biological control. Biological control, however, is available for private landowners. Please contact the Division of Forestry for more details on biological control options.
  - Labor options: do it yourself or hire a professional.
6. Types of chemical for treatment
  - Imidacloprid: for lightly to moderately infested trees.
    - Treatment life last between 5-7 years.
  - Dinotefuran: for heavily infested trees.
    - Treatment life last between 1-2 years.
  - Make sure to read all label instructions before applying any chemical and do not apply directly to any water sources.
7. Chemical treatment methods
  - Soil drench:
    - Please allow at least a 10 foot buffer zone next to any water source.
    - Remove all flowering plants or stop flowering within 10 foot buffer zone.
    - Move back leaf and duff litter to expose roots to drench.
    - Should not be conducted on slopes greater than 75%.
    - Easy to apply.
    - Follow "THCP Quick Reference Chart"
  - Soil injection:

- Please allow at least a 10 foot buffer zone next to any water source.
  - Injector can clog and needs cleaning and maintenance.
  - Calibrate injector based on product manual.
  - Follow product label for different treatment approaches (e.g. grid system, circle system, basal system).
  - Stem injection:
    - Can be used by trees directly adjacent to a water source.
    - Must drill holes in trees to apply chemical but newer systems are becoming less invasive.
    - More time-consuming system compared to the other treatment methods.
    - The injection system needs cleaning and maintenance.
    - Should be done by professionals.
    - 4mL per 1 inch DBH.
  - Foliage spray:
    - Please allow at least a 10 foot buffer zone next to any water source.
    - More potential for chemical exposure and drift.
    - Foliar applications are best made in late spring or from July through September when the insect is not covered by protective white wool.
    - Should not be used on trees larger than 30 feet in height.
  - Bark spray:
    - More potential for chemical exposure and drift
    - Only use Dinotefuran product in this system.
    - Do not apply to wet bark, during rainfall or if rain is expected within 12 hours.
    - Please allow at least a 20 foot buffer zone next to any water source.
8. Mixing rates
- Consult “THCP Quick Reference Chart”
9. Estimate cost of treatment \*these are estimates and are subject to change\*
- Professional treatment with Imidacloprid \$1.00 – \$4.00 / diameter per inch (labor + chemical)
  - Professional treatment with Dinotefuran \$3.00 –\$9.00 / diameter per inch (labor + chemical)
  - DIY with Imidacloprid \$.08–\$1.44 / diameter per inch
  - DIY with Dinotefuran \$.76 to \$.85 / diameter per inch
10. Combine Tree Data and the Cost of Chemical
- Add all your DBH measurements to get total inches of diameter to treat.
  - Dosage rates are different per treatment method. See above treatment methods for more information.
  - Based on your treatment method, chemical type & cost, and total inches, you can estimate total cost of treatment.
  - Monument every tree that has been treated with paint or flagging. This will be helpful for record keeping and identification in future treatments.

**\*NOTE:** It is the user's responsibility to read and follow all label instructions when using any pesticide materials.

For further assistance, please contact the TN Division of Forestry at (615) 837-5552

