



Saving the Hemlocks at Hemlock Bluffs Nature Preserve

Why should I care?

Hemlock Bluffs Nature Preserve in Cary is centered around an isolated outlying stand of native Canadian hemlocks, *Tsuga canadensis*. These beautiful evergreen trees are remnants of a Pleistocene forest, located on a north-facing slope overlooking Swift Creek. Approximately 200 trees survive on this unique easternmost North Carolina location.

What is a hemlock woolly adelgid?

An adelgid is a tiny (1/32") oval insect about the size of an aphid. Usually, it remains hidden beneath a protective woolly fluff on the stem at the base of the needles. With tiny mouthparts it can suck the sap from the tree, cause needle drop, and eventually cause death to stem and tree within just a few years. There are many small fluffy insects on other plants, but this insect only attacks hemlock (*Tsuga* sp).

Where did the hemlock woolly adelgid come from?

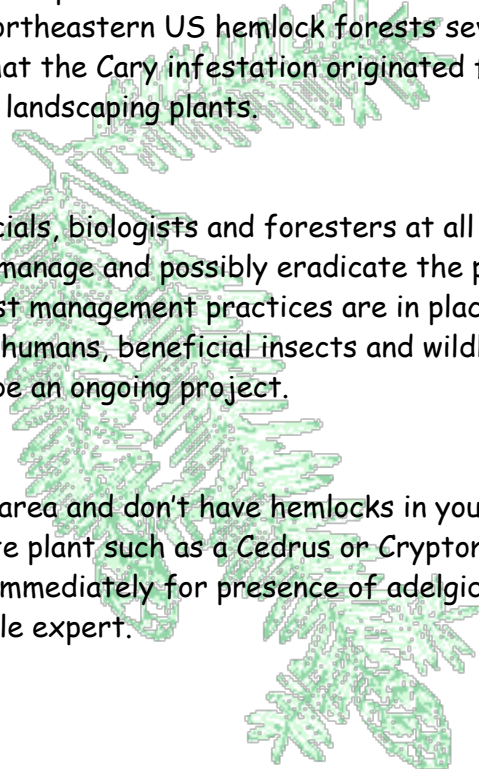
This is an introduced pest that has been in Pacific northwestern forests since 1927. It turned up in Northeastern US hemlock forests several years ago and hit NC in 1995. It is suspected that the Cary infestation originated from infested hemlocks brought into the area as landscaping plants.

What is being done?

At the park, officials, biologists and foresters at all levels have been consulted to create an action plan to manage and possibly eradicate the pest. Surveys have been made and sound integrated pest management practices are in place using the safest products with the least impact to humans, beneficial insects and wildlife, with special concern over water quality. This will be an ongoing project.

What can I do?

If you live in the area and don't have hemlocks in your landscape, don't introduce any. Consider a substitute plant such as a *Cedrus* or *Cryptomeria*. If you do have hemlocks, inspect them immediately for presence of adelgid. If you need help, contact the park or knowledgeable expert.



My hemlocks are infested. How do I treat?

Homeowners can treat small trees with horticultural oil sprays or soil drenches. Hort oil sprays are effective only if they contact the insect. They require thorough coverage and multiple applications. Soil drenches give systemic protection taken up by the roots and last about two years. Soil drenches should not be used next to water sources. Homeowner products with imidacloprid include Merit® and others. Dinotefuran can be found in GreenLight Tree & Shrub with Safari®.

For mature hemlock trees, a certified arborist or landscape professional is suggested. Soil injections or bark sprays with dinotefuran (Safari) may be preferred.

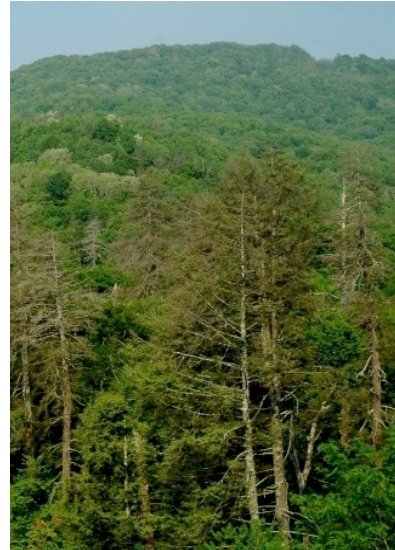
I don't want to use chemicals. Are there biological or organic control options?

Horticultural oil is an "organic" option. Imidacloprid and dinotefuran, though not organic, are extremely safe products when used properly, are more effective, and offer very little off-target exposure when used as a systemic.

The USDA Forest Service, APHIS and the NC Dept. of Ag. & Consumer Services are conducting releases of several small beetles that prey upon this adelgid. Work is continuing and this expensive application is not appropriate for individual trees.



Woolly adelgids on twig.



Dying hemlocks in Pisgah Forest.

Photos by William F. Ciesla, forestryimages.org

Other sources of information:

- [HWA Insect note #19](#)
- [Pests of Hemlock Insect note#133](#)
- [Find a certified arborist](#)
- [US Forest Service Info](#)
- [Hemlock Bluffs Nature Preserve](#), Laura White, Nature Center Supervisor 2616 Kildaire Farm Road, Cary, NC 27518 (919) 387-5980. Hemlocks@townofcary.org