



©C. Gray

## How can I Slow the Spread of HWA?

Keep in mind that HWA spreads very easily to establish in new areas! If you know or suspect that HWA is present in a given stand, please follow the checklist below to help prevent further spread:

- If possible, avoid visiting hemlock stands in other, uninfested areas for several days
- Do not collect branches or foliage; take photos instead
- Use a lint roller to remove potential crawlers from clothing
- Do not bring your pet into infested stands
- Do not park your vehicle near or under hemlock trees
- Launder all clothing prior to re-entering the field
- Avoid placing bird feeders near hemlock trees – birds can accidentally transport HWA to new locations.

Preventing the movement of HWA infested wood during the “crawler” season (from late March to the end of August) will greatly reduce the risk of HWA spreading across the province. Please help by doing your part in keeping this invasive species in check.

### When you need firewood, remember to:

- Source it locally; don't bring it from home if you're going camping
- buy certified heat-treated (kiln-dried) firewood where available
- check with parks or campgrounds before you go for their rules about firewood

Remember that ten adults can produce up to 30 million new adelgid in two years!



## If I find HWA, how can I report it?

If you think you have found HWA on hemlock trees, please take a picture and report it to the Canadian Food Inspection Agency at:

<https://inspection.canada.ca/pests>  
or on **iNaturalist** at [inaturalist.ca](http://inaturalist.ca)

## Where can I find out more?

If you would like to learn more about HWA, visit [www.nshemlock.ca](http://www.nshemlock.ca). There you will find more information on hemlocks, HWA, research and resources.

If you would like to talk more about what your options are or get involved in HWA surveys on your land as a volunteer, please contact the Mersey Tobeatic Research Institute:

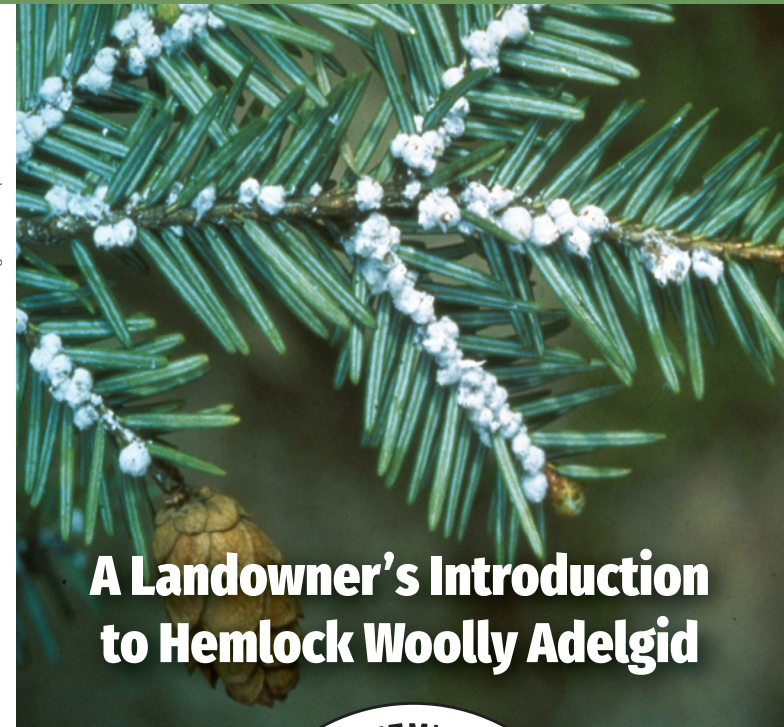


9 Mt Merritt Rd, Kempt, NS B0T 1B0  
[info@merseytobeatic.ca](mailto:info@merseytobeatic.ca)  
(902) 682-2371  
[www.merseytobeatic.ca](http://www.merseytobeatic.ca)



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## A Landowner's Introduction to Hemlock Woolly Adelgid

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Nova Scotia's Eastern Hemlock is a foundational species in Eastern Canada and some of the last remaining old-growth forests. They perform unique ecological functions. Dense shade cast by hemlocks regulates the temperature of woodland understories and provides protection from weather extremes. Slow decomposition of hemlock needles regulates soil nutrient cycling. Forest stands dominated by hemlock support a diversity of plants, fungi, insects, and wildlife which depend on them for their survival.

## Hemlock Woolly Adelgid (HWA) (*Adelges tsugae*)

HWA is a small, invasive, aphid-like pest that causes decline and eventual death to our Eastern hemlock. A native of Japan, HWA has been advancing up the eastern seaboard of North America for 70 years. HWA was first identified in Nova Scotia in 2017.



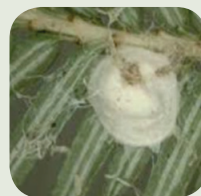
From September to April (fall/winter), the aphids remain stationary and attached to the hemlock by their straw-like mouthparts inserted directly into the hemlock twig near the base of a needle.

Between April and August, the eggs hatch into nymphs that we refer to as called 'crawlers' which are tiny, very numerous and mobile. During late spring and summer, the risk of transporting HWA to another site is high.

HWA is passively spread by wind, birds, animals, and humans, making it able to move long distances. Hemlock decline is not evident until it's too late and the pest is rampant, so early detection is key. Found only on hemlock, HWA can be identified by small woolly masses, on the underside of twigs near the base of the needles, that can be seen from late fall through early spring. In the case of a lighter infestation, you may only see one or two woolly masses. During the early fall the nymphs can be seen with a distinct white halo surrounding them.



Spittlebug  
©D. Brown



Spider sack & Oak skeletonizer  
©extension.unh.edu



HWA has some common lookalikes, such as spittlebug, spider sacks, or the Oak skeletonizer. If in doubt, take a photograph and send to [MTRI info@merseytobeatric.ca](mailto:MTRIinfo@merseytobeatric.ca) or [Ron.Neville@inspection.gc.ca](mailto:Ron.Neville@inspection.gc.ca) at CFIA to help with identification.

## What can I do if I find HWA on my property?

You have several options to proactively manage HWA on your property. Before you consider harvesting your timber, please review these options and contact us to talk it through. Your forest is an important part of the broader landscape and together we can safeguard biodiversity and forestry for future generations.

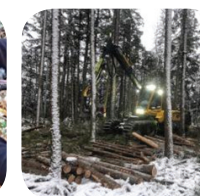
### What are my options?

**Do Nothing:** At least 80% of infested hemlock trees are expected to die within 4-15 years. Individual trees may possess some level of resistance to HWA and will be extremely important for the survival of the species. The loss of hemlock will gradually lead to hardwood-dominated stands or a mix of hardwoods, red spruce and white pine. In this transition, the dead standing and downed hemlock will provide valuable habitat for a variety of birds, mammals, and invertebrates such as pollinators.

**Chemical treatment:** Hemlock can be protected from HWA by treatment with systemic insecticides. In Canada, only one option is currently available: direct stem-injection of imidacloprid, a neonicotinoid pesticide which spreads via the vascular system of the tree and kills HWA as it feeds. Trees remain protected against HWA for up to 5 years. The injection process is costly, so prioritizing individual trees or valuable stands is strongly recommended. To learn more about imidacloprid and its uses, availability, application regulations and certified applicators visit [www.nshemlock.ca](http://www.nshemlock.ca).



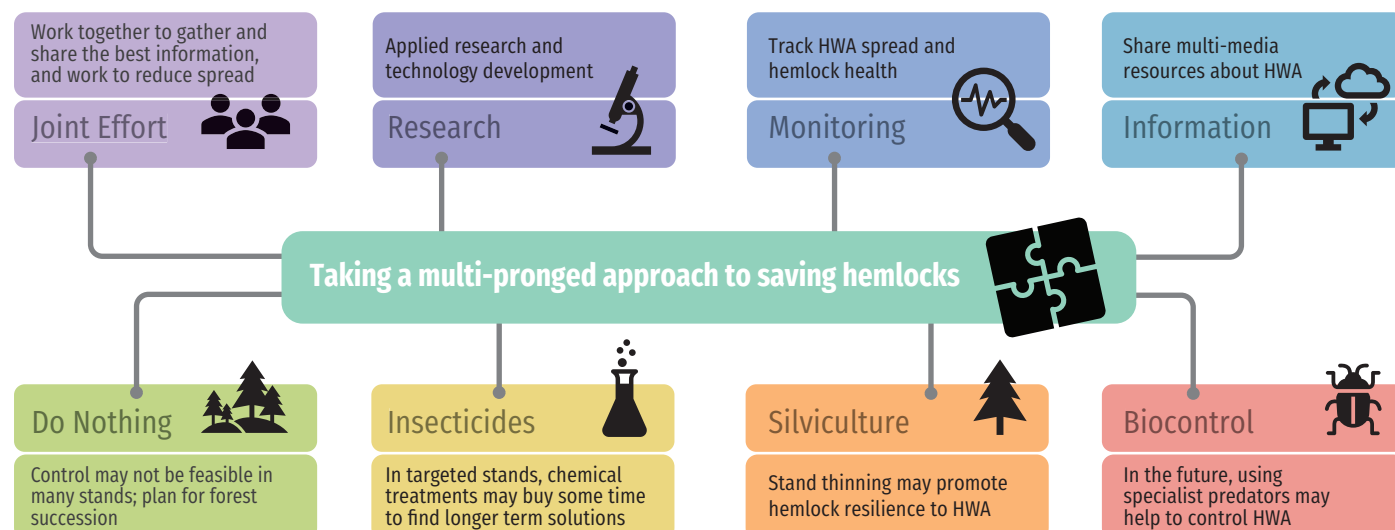
Chemical treatment  
©J.Barker



Silvicultural treatment  
©R. Ford



## Actions and Options to control HWA impacts in Nova Scotia



**Silvicultural Treatment:** Long-term stand management should be ongoing to promote overall stand health and resilience against stressors. Prior to HWA impacts, stand thinning may promote hemlock growth, boosting its tolerance to HWA infestation, although this approach alone is unlikely to be sufficient in the long term. Following HWA detection in your stand, removal of highly infested trees (hotspots) may slow down the further spread of the pest. Pre-emptive cutting of healthy hemlock stands in anticipation of HWA is not recommended, as it could result in the loss of resistant hemlock, and dramatically impact the associated habitat.

### Biological control is on the horizon

Introduction of specialist natural enemies of HWA is the only long-term, region-wide strategy to ensure persistence of hemlock in the landscape. Canadian Forest Service, Parks Canada, and other members of the HWA Working Group – Maritimes are actively researching the potential for releasing predators of HWA to help control the populations of the pest. Biocontrol is not a simple or quick process; however, we remain optimistic that it will begin to play a key role in the integrated pest management of HWA over the next 10-20 years. Another reason to leave uninfested hemlock in the forest.