Multiple Pests Threaten Hemlocks in Southern NH

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Jen Weimer, Forest Health Specialist, NH Division of Forests & Lands, Forest Health Program presented a seminar on Jan 12, 2016 about the four pests threatening the health of the hemlock trees in the Conservation Commission's Joe English Preserve on Brook Rd in Amherst.

Hemlock woolly adelgid (HWA), was discovered there by Jen during the summer of 2006. UNH Extension entomologist Rachel Maccini who was teaching a series of Master Gardener classes at Peabody Mill Environmental Center, noticed insect holes in some large nearby trees. Fearing the dreaded Asian long-horned beetle she contacted Jen who promptly checked. No beetles, but intrigued by the lovely forest, she took a walk along the Hemlock Trail and discovered the dreaded hemlock woolly adelgid. This devastating pest from Asia has been moving north from Massachusetts, spread by birds and animals. Small pockets had been found in the area, but to find it in the forest on the huge hemlocks was terrible news. She had been following research on biocontrol methods for HWA, and another beetle from the Pacific Northwest, *Laricobius niginus* that feeds on the western adelgid and is very cold tolerant was becoming available in small amounts. Jen was able to get 500 from a lab that were delivered in November 2009. She immediately drove to Joe English and released 100 beetles on five trees. These beetles are active and feed all winter on all stages of the adelgid. Sadly, she has never seen any evidence of them since.

Meanwhile, two years ago another hemlock pest called Elongate Hemlock scale joined the feeding frenzy. This insect from Japan was discovered by an Amherst homeowner in the fall of 2009, who was looking for the adelgid. I took her leaf sample to a tree expert who was alarmed and sent it on to Jen who identified this additional hemlock threat. The USDA Forest service Fact Sheet explains that "scale populations build slowly on healthy trees, but much more quickly on stressed ones....Trees often die within the next 10 years.....These weakened trees are unsightly and heave little chance for recovery. They fall victim to secondary pests, such as hemlock borer..." Jen just discovered both Hemlock Borer, a native bark beetle, and a tip blight, *Sirococcus tsugae*, in the Joe English forest. The last one is a fungal disease that infects the young understory hemlock saplings causing needle drop. There are no known controls for this disease. The arrival of the borer spell the end for hemlock trees – the woodpeckers attack, bark falls off and the trees die.

Area conservation commissions, foresters, and home owners were invited to Jen's program held at Peabody Mill Environmental Center, next to the infested hemlock forest. She explained these four pest problems to help forest managers develop a strategy to deal with the deadly situation in their town forests. Charlie Koch the Amherst Commission's consulting forester who developed their first Forest Management Plan in 1996, led the group on a walk along the Hemlock Trail to view the damaged trees and to look for the various insects and diseased trees. This fall he has been doing a routine forest harvest at Commission's Haseltine Forest where he and ACC member and arborist Lee Gilman discovered hemlock problems in there too. They have decided to harvest all the hemlocks, a sanitation harvest, because the rotation for harvests is 15 years; well past the 10 year death spiral. Dead hemlock is not saleable. Now that the extent of the devastation in the Joe English forest is understood, a hemlock harvest will be scheduled for there also. It will dramatically change the Hemlock Trail where the huge hemlocks are or were. Hike there before they are gone. A few dead and broken hemlocks as shown in the photo can be seen from the trail – the trunk breaks quite high up.

Hemlocks grow everywhere but especially along forest stream banks providing essential shade that keeps the streams cool; essential for fish health. The loss of hemlocks in these sites will be especially disturbing because it will impact the fish and aquatic populations.

Although it is impracticable to treat forests, homeowners have more options. The first and simplest way to slow down the spread of these insects into your yard is to remove bird feeders. Other control measures and strategies are explained in the excellent US Department of Agriculture educational materials and publications available on line:

Managing Hemlock in Northern New England forests threatened by HWA and Elongate Scale <u>https://extension.unh.edu/resources/files/Resource005573_Rep7772.pdf</u> Jen is one of the contributors!

http://na.fs.fed.us/spfo/pubs/pest_al/hemlock/hwa05.htm HWA

http://na.fs.fed.us/spfo/pubs/pest_al/ehscale/ehscale.pdf Elongate Hemlock scale

http://na.fs.fed.us/pubs/palerts/tip_blight/tip_blight_lo_res.pdf Tip Blight on Hemlocks

http://www.na.fs.fed.us/spfo/pubs/pest_al/hborer/hborer.pdf Hemlock Borer