



June, 2013 Food For Thought

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Insect Resources

www.nhbugs.org

The go-to site for information about damaging insects and diseases. This site is a cooperative venture maintained by UNH Cooperative Extension, NH Department of Agriculture, Markets & Food, NH Department of Resources and Economic Development - Division of Forest & Lands, USDA - Animal & Plant Health Inspection Service (APHIS) and the US Forest Service.

UNH Cooperative Extension Forestry Information Center: 1-800-444-8978.

Greetings,

Insects are everywhere. Just step outside at this time of year and the mosquitoes and black flies will remind you which taxonomic class is really in charge: *Insecta*!

Agriculture is impacted by insects in both positive and negative ways. Pollinators such as honey bees, native bumble bees, flies, wasps and many more provide vital services for us. It is estimated that at least 30% of our crops depend on the work of tiny pollinators. Some of our favorite foods would not be available without them. There are also many predatory insects which feed on the "pests". The pests are those that feed on our plants or spread disease. Humans put a lot of energy into battling these six-legged menaces in order to protect crops, trees, livestock and landscapes.

Insects in their native environment are usually kept in balance by predators. However, when species move or are brought to a new habitat, either accidentally, or with some other purpose in mind, the checks and balances are thrown off and populations can multiply without natural restrictions. This is what happens with non-native, introduced and invasive species.

The forests, nurseries and horticultural businesses of New Hampshire have recently been assaulted by yet another exotic species of insect, the emerald ash borer or EAB. Because of the potential impact that this insect could have on our hardwood forests and landscape businesses, we will devote much of this newsletter to providing resources for learning about this pest.

www.emeraldashborer.info

National EAB website

Vocabulary

Invasive species - organisms that are able to out compete other species and monopolize a habitat, usually because they are not native to an area and have no natural predators in that location.

Non-native or exotic species - organisms that have been brought in accidentally or on purpose to a place that they have not been historically found.

NHAITC Calendar

June - National Dairy Month

June 4 - Ag Awareness Day,
Haverhill Cooperative Middle School

June 4-6: School to Farm Days at
UNH, Durham

**June 25-28: National Ag in the
Classroom Conference, Minneapolis,
MN**

On-line registration is open:

www.agclassroom.org/conference2013

Knowing About Insects

Insects have interesting and varied life cycles. They go through metamorphosis meaning the parents and offspring look nothing alike and often live very different life styles. Often the adults fly and the young do not. Sometimes young live in the water or underground.

Butterflies, moths, beetles, bees and wasps all go through a four stage "complete" metamorphosis. The

The disheartening discovery of EAB in Concord in March has led to an all out search for more signs. This effort is a reminder that every action has consequences, some intended, many not. Though no one is sure, it is possible that the insect came into the state on firewood, brought by unsuspecting vacationers intent on enjoying the forests and natural areas of our state. The irony is that the composition of those forests will now change as a result of the presence of this insect.

This is also an example of how studying science, agriculture and natural resources can be valuable for average citizens as well as professionals. The initial discovery of the insect in Concord was made by an observer who had a bit of awareness and made a report to the Department of Agriculture.

So, as another school year winds down, send your students off with a message to be observant throughout the summer. Whether they spot a potentially devastating insect pest, or are able to view bumble bees, butterflies and honey bees hard at work, there is much to be learned from the natural world just by slowing down and watching.

Good luck with the final weeks of this school year.

Ruth

Ruth Smith, Statewide Coordinator
NH Agriculture in the Classroom

What is EAB?

The emerald ash borer is a beetle from East Asia. It probably arrived in this country on solid wood packing material. The first US discovery was in southern Michigan in 2002 but it has spread to 19 states, killing tens of millions of ash trees.

The adults are metallic green and about 1/2 an inch long. They chew a D-shaped exit hole in the bark of ash trees when they emerge in spring.



stages include: egg, larva, pupa and adult. The simple metamorphosis experienced by dragonflies, damselflies and mayflies has only three stages, lacking the pupa or resting stage.

A lot of agricultural damage is done in the larval stage when caterpillars munch on leaves, buds, inner bark and flowers. However adults can also cause damage especially when females lay eggs on plants. Adult insects can transport diseases that infect plants and animals.

Knowing the life history of pest and beneficial insects is important for farmers. Use of biological controls and Integrated Pest Management requires an understanding of when an insect is likely to be most prevalent, at what stage it does its greatest damage, and at what stage in its development it is most vulnerable to outside intervention. A treatment used on adult stages may not work as well on the larval forms.

It's also important to be responsible with methods of pest control so as not to have a negative impact on the beneficial insects.

Help your students learn about insect life cycles and the fact that there are both friends and foes in the insect world. Certainly not all insects are "bad" and getting to know some of the "good" ones can help us understand the role that each plays in the ecosystem.

How to Help

Learn to identify the signs of the emerald ash borer and watch for them. Also pay attention to bright green beetles that may appear in your

The larvae, a long creamy white grub, chews serpentine galleries in the inner bark and wood which can be seen if the bark is removed.



The adult beetles nibble ash leaves but don't cause much damage. It is the larvae, feeding on the inner bark that are life threatening to the tree. The inner bark is where the water and nutrients flow. Larval munching disrupts that flow and can kill a tree within 3-5 years of infestation.

Early detection of an infestation is difficult. However, as the impact increases the canopy of an infested tree will begin to thin and may even die. One third of the branches may die in a year.

Woodpeckers also feed on the larvae so intense woodpecker activity can be a sign of the presence of the emerald ash borer.



yard this month. Use the tips at www.nhbugs.org to help you identify what you are looking at. There are other insects that can be confused with the EAB.

If you see an adult or signs that cause you to suspect the presense of the borer, complete one of the report forms on the nhbugs website and send it in.

Don't move firewood! There is a quarantine on firewood from Merrimack County, it should not be moved anywhere. Do not bring any wood in from other states. If you are purchasing firewood for next winter get it from as close to where you live as possible.

Spread the word to your students, colleagues, neighbors and friends. It will take a lot of people working together to keep this pest from devastating the ash trees in our nurseries and forests.

As always, education is the key to success.

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No, It's not a Kite!

You may see purple triangles hanging from trees this summer. These are emerald ash borer traps. They are used to attract the EAB and help determine where they are so management can prevent their spread.

It was originally thought that the purple color would attract the insect. However, scientists have been learning that the color may not be so important. You may see some green boxes hanging in trees for this purpose as well.

Whatever the color, please do not disturb these and let them do their work.

EAB Awareness Week

Governor Maggie Hassan declared the week of May 19-25 Emerald Ash Borer Awareness Week. Her proclamation urged all citizens to learn more about this insect and commit to helping to reduce its spread and impact. That is an indication of how serious this matter is. Though that week is past, learning more and sharing information continues to be vital for the health of our forests, forest industry, nursery businesses and overall ecosystem.