

MSU Experts Seek Help in Monitoring Invasive Forest Pests



Source: www.TurfMagazine.com

The negative consequences of invasive species in the United States, including plants, animals, insects, pathogens and other organisms, are staggering. Effects of these unwanted, foreign invaders range from enormous economic costs to profound changes in our native ecosystems.

Invasive insect pests, for example, can affect human health, agricultural production, aquatic and forest systems, property values and outdoor recreation. Native insect species may be outcompeted or displaced by invaders. Pesticide use may increase, as producers or homeowners attempt to reduce damage from invaders. Some of the most damaging invasive pests kill the plants or trees they feed on, triggering a cascade of changes that affect other animals and other types of vegetation.

Recent estimates show economic costs of invasive forest insects in the U.S. exceed \$4 billion annually. Moreover, most of these costs are borne by city governments and homeowners (Aukema et al. 2011.)

Numerous regulations to slow the arrival and transport of non-native forest insects have been put into place by federal and state regulatory officials. Nevertheless, given the enormous amount of cargo imported from overseas, this problem is not likely to go away.

Invasive pest problems, including zebra mussels, garlic mustard and emerald ash borer, are well known to Michigan residents. In fact, emerald ash borer, which has become the most destructive forest insect to ever invade North America, got its start in southeast Michigan (Cappaert et al. 2005, Herms and McCullough 2014). Scientists have estimated more than \$10.5 billion will be spent by 2019 to either protect or remove ash trees just in urban landscapes (Kovacs et al. 2010).

Unfortunately, still other invasive forest pests are poised to enter Michigan

and cause further damage to trees in our landscapes and native forest ecosystems. Thanks to a recent grant from the Michigan Invasive Species Grant Program, educators and researchers at Michigan State University are launching a statewide effort to help residents learn about the risks and impacts of invasive forest pests.

Many of the educational activities will target three major invaders that pose serious threats to Michigan trees and forest, including Asian long-horned beetle, hemlock woolly adelgid and thousand cankers disease of walnut. These three pests are not known to be in Michigan—at least not yet—but they are established in other states and in eastern Canada. All three pests can kill their host trees and could be devastating if they become established in Michigan.

Titled “Eyes on the Forest: Invasive Forest Pest Risk Assessment, Communication and Outreach,” this grant links research with outreach and communication projects through the MSU Department of Entomology and Michigan State University Extension. The project involves a multi-faceted approach that combines modeling to assess likely invasion pathways, mapping to identify areas at high risk of pest introduction, and public education.

A major goal of the project is to increase awareness among Michigan residents about the risks and impacts of invasive forest pests. This should reduce the risks that new pests will be accidentally introduced and increase the chances that a new pest will be quickly detected if one does become established. As the project progresses, Michigan will be better prepared to prevent and/or respond rapidly to first known occurrences of any of these new pests should they ever be found in the state.

One of the unique aspects of this grant will be the creation of a network of “Sentinel Trees” across Michigan. The framework of the Sentinel Trees Network will be an extensive network of trained volunteers who agree to “adopt” an individual tree, then periodically monitor and report on the condition of the tree over time. This network should greatly increase the number of people checking on the health of trees, in forests, suburbs and urban areas. The more pairs of “eyes” out checking trees, the more likely it is that new pests or other problems will be detected early, before substantial damage occurs.

This project is just getting underway but will be ramping up rapidly and should be fully operational later this year. For more information about the Eyes on the Forest project, contact me at mccullo6@msu.edu or Russell Kidd, Eyes on the Forest outreach coordinator, at kidd@msu.edu.

More information about the possible impacts on Michigan’s forests from Asian longhorned beetle, hemlock woolly adelgid and thousand cankers disease is available in a free two-page fact sheet. The fact sheet, titled “Exotic Forest Pests: Let’s Keep Them Out of Michigan,” is available from the MSU Extension Bookstore. This fact sheet provides photos and a brief summary of the potential damage these pests can cause, what can be done to combat the problem, plus links to other sources of information.

Deb McCullough is with the Michigan State University Extension, Department of

Entomology.