

Michigan Forest Health News

An update on what's happening with Michigan's forest health



Asian Longhorned Beetle

On June 17, 2011, Ohio became the fourth state to detect Asian longhorned beetle (ALB) since the insect was first discovered in the U.S. in 1996. The ALB has also been confirmed in Ontario, Canada, outside of Toronto.

Adult beetles were found in three ornamental maple trees growing in a private vineyard in Bethel, Ohio, 30 miles southeast of Cincinnati. Ohio Governor John Kasich has signed an Executive Order restricting the movement of firewood, hardwood logs and host nursery stock out of the infested county to help prevent the spread of ALB.

With ALB now confirmed a short four-hour drive from Michigan's southern border, the Michigan Department of Natural Resources (DNR) has stepped up efforts to detect this destructive forest pest before it becomes established. Within the DNR, Parks and Recreation Division staff is working in cooperation with Forest Management Division (FMD), to survey for ALB in state parks across Michigan. Staff will be looking for adult beetles, as well as the large (3/8-inch) holes ALB make when they chew their way out of infested trees.

A second survey will be conducted this fall, once leaves have dropped and canopy branches are easier to see.

The ALB favors maple trees, but can successfully attack birch, sycamore, poplar, willow, elm and other hardwood species. Infested trees decline slowly and may not die

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or even show symptoms for several years. Meanwhile, wood quality is severely affected as beetle populations continue to expand outward.

If you think you have found an ALB adult, contact a DNR Forest Health Specialist. For more information about ALB, [visit the Beetle Buster's Website](#).



Imprelis™ Herbicide Damage

A relatively new herbicide from DuPont, Imprelis™, developed for use by lawn care professionals, has been causing damage to Norway spruce and eastern white pine across parts of Michigan. Trees damaged by Imprelis™ suffer symptoms that resemble frost damage or those caused by some shoot-feeding insects.

Michigan State University Extension is tracking this problem and will continue to provide updates. Click here [to view the MSU Extension Imprelis™ Home Owner's Fact Sheet](#).

Heterobasidion Root Disease (HRD)



A fungus considered among the most important and destructive diseases affecting conifers in North America was recently detected for the first time in Michigan's northern Lower Peninsula. The fungus, *Heterobasidion irregulare* (formerly *Fomes annosus* or Annosum root rot), was confirmed in a red pine stand on the Manistee National Forest, in Wexford County.

Red, jack and white pine, as well as white spruce, are especially susceptible to HRD. Unlike bark beetles and many other pests that become a problem in stands under stress due to lack of management, HRD is a problem in managed stands. This is because the fungus enters through freshly cut stumps and then spreads below ground through root grafts. Research shows that once introduced, the disease can move several feet per year in a stand.

HRD-infected stands are characterized by circular pockets of dead and dying trees with the oldest mortality in the center of the pockets. Bark beetle infestations have a similar appearance. Detection of HRD fruiting bodies in the field is the fastest way to confirm the disease.

Fungicides can prevent new infection, if applied promptly to stumps after cutting; although, they will not stop the spread of the disease, if stumps are already infected.

The DNR Forest Health Program is conducting early detection surveys for HRD. If you are aware of red pine stands that show symptoms similar to HRD, contact a DNR Forest Health Specialist.

For more information, see [the Wisconsin Department of Natural Resources' page on HRD](#).

Oak Wilt

Red oak trees infected with oak wilt are showing symptoms of the disease right on schedule again this year in Michigan.

Beginning around the 4th of July each summer, trees infected with the oak wilt fungus begin to have wilted leaves from the top down, and then rapidly shed their leaves. Leaves of infected trees take on a brownish hue and

appear waterlogged, or they may exhibit patches of brown areas intermingled with areas that are still a healthy green color. Infected trees die quickly, often within a few weeks of first developing symptoms.

Because oak wilt is spread locally through the root

systems, root graft barriers cut into the soil using a vibratory plow blade remain the most effective



means of stopping this disease. Fungicides are ineffective because they are unable to overtake the rapidly-moving oak wilt fungus as it spreads through the tree.

Spore-producing pressure pads can form below the bark of trees recently killed by oak wilt. These sweet-smelling pads attract sap-feeding beetles which pick up the spores and transfer them to healthy oak trees through fresh wounds.

Chipping or burning infected wood, or cutting it into firewood and covering it completely with a tarp, will prevent these beetles from reaching the pads and



spreading the disease overland.

Avoiding damage to red oak trees between April 15th and July 15th, when adult beetles are active, will help reduce the overland spread of this serious disease.

For more information, visit the USDA website at this link: [US Forest Service Web Page on Oak Wilt.](#)

Spring Defoliators

The friendly flies that were so numerous around the northern Lower Peninsula last summer have done it again. Predation by these insects

on forest tent caterpillar pupae has dramatically knocked down the caterpillar populations in



most areas this year. Aerial forest health surveys that began in mid-July have not detected defoliation in those areas that were hard hit the past two years. Historically, collapse of forest tent caterpillar outbreaks is usually followed by an 8 to 15 year lull before populations begin to build again. Meanwhile, friendly fly numbers are declining and will remain low until the next time the forest tent caterpillar rears its head.

Gypsy Moth numbers also appear to have dropped significantly in the northern Lower Peninsula, where approximately 943,000 acres were defoliated in 2010. In this case, cool, wet spring weather led to a buildup in *Entomophaga maimaiga*, an introduced fungal pathogen that kills developing gypsy moth larvae before they can cause significant

damage. Gypsy moth is an introduced pest and cycles are more difficult to predict, but odds are there will be at least a few years' respite before populations rebound.

Cherry and other fruit trees are getting a break too, as **eastern tent caterpillar** populations are down from the outbreak levels of the past few years.

Generally, healthy trees do not suffer long-term effects from defoliation by spring defoliators. Most forests will recover completely, with dieback and mortality limited to occasional understory trees and trees already suffering from the effects of drought, old age and other stressors. Still, it is a good idea to avoid additional stress on trees that have been heavily defoliated for two or more consecutive years.

It may be wise to delay thinning a stand during or immediately following an outbreak, if the stand has not been thinned regularly prior to being defoliated. By waiting a couple of years or more to thin a stand following heavy defoliation, trees will have time to recover and replenish their food resources. These trees will then have the energy reserves they need to respond to thinning, i.e. grow the biomass (wood, leaves and roots) to fill the gaps created by the harvest. Otherwise, the stress from thinning of a stand on the heels of recovering from defoliation can trigger dieback and tree mortality.

Hemlock Woolly Adelgid

The hemlock woolly adelgid (HWA) is a small aphid-like insect native to Asia. Eastern hemlock infested in North America often die within several years. Michigan has an HWA quarantine preventing shipment of hemlock from infested areas. In 2010, new infestations

were detected on ornamental hemlocks in three counties: Emmet, Macomb, and Ottawa, bringing the total number of counties with HWA introductions to five. The DNR has



received USDA Forest Service grants to maintain statewide surveys of at-risk

hemlock resources. The Michigan Department of Agriculture and Rural Development (MDARD) continues its efforts to detect HWA in nurseries and quickly react to detections. They are currently using USDA Forest Service funds to remove infested and adjacent hemlocks from the newly detected introductions and treat a border of remaining trees to ensure the HWA does not establish.

Hickory/Walnut Declines

Reports of declines in hickory and walnut are being sought by the DNR Forest Health Program.

Decline and death of bitternut hickory, *Carya cordiformis*, was reported in Michigan in Menominee County, along the Menominee River, for the first time in 2010. Hickory decline has been known to occur in several Northeastern states and Wisconsin for the past five years. This problem has historically been attributed to outbreaks of the hickory bark beetle, *Scolytus quadrispinosus*, during extended periods of drought. Recently, a new fungus, *Ceratocystis smalleyii*, associated with the bark beetle, is causing numerous bark

cankers. The cankers impair the tree's ability to transport water and nutrients.

In May, the MDARD established a quarantine to protect

walnut (*Juglans spp.*) from Thousand Cankers Disease (TCD). The TCD is an insect-disease complex similar to hickory decline involving



the walnut twig beetle, *Pityophthorus juglandis*, and a fungus, *Geosmithia morbida*. Walnut twig beetles carry the fungus to black walnut trees where cankers form at the feeding site. Heavily attacked trees produce many cankers, which eventually kill the trees. It appears that the range of this beetle is expanding eastward, threatening walnuts in adjacent states.

Red Pine Needle Browning

Mature plantation red pine on the Hiawatha National Forest appears to be in poor vigor.

The same condition is being reported in many areas of north-central Wisconsin



and portions of Minnesota. Symptoms appear to be similar in all cases. Last year's and older



needles have brown tips, and this year's new growth is

stunted and slow to develop. These symptoms are more prevalent in the lower canopy. The latest theory is that these trees are in areas stressed by some combination of drought, light soils, and in some areas an unusual defoliation of red pine by the jack pine budworm. Thus, affected red pine appears to be depleting stored energy in the older needles, as the new needles expand. Once the new needles are fully developed, they normally produce 90% of the food for a red pine. Areas will be watched for recovery, as needles fully expand.

Spruce Budworm

Defoliation of white spruce and balsam fir by the spruce budworm (SBW) increased significantly in Michigan's Upper Peninsula in



2010. Repeated defoliation of mature and over mature spruce/fir has occurred in isolated

Spruce Budworm Cont. from page 5

areas over the last several years. Top kill and tree mortality is common in these stands. Periodic SBW outbreaks every 30–50 years are part of the natural cycle associated with SBW damage to a forest. These periodic outbreaks cause extensive damage and tree mortality in Northern spruce and fir forests across the Eastern United States and Canada. The DNR and USDA Forest Service are currently flying aerial surveillance to assess whether SBW activity expanded from last year's levels. Balsam fir is the species most severely damaged. Spruce mixed with balsam fir is more likely to suffer budworm damage than spruce in pure stands.



Spruce Budworm Adult Larvae

Sirex

Since its detection in New York State in 2004, the European wood wasp, *Sirex noctilio*, has been detected throughout the Eastern Great Lakes region of Ontario, Canada. This exotic wood wasp (commonly referred to as horntail wasp) is native to Europe, Asia and Northern



Africa. This wasp is rarely a pest in its native land where it confines its attacks to dead or dying conifer trees. However, in areas where it has been introduced, *Sirex* poses a possible threat to trees that are already stressed due to age, drought or competition from other trees. As of 2010, *Sirex* has been confirmed in Saginaw, Huron, Sanilac, St. Clair and Macomb Counties. There are no federal funds available in 2011 to pursue *Sirex* early detection.

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