

Vermont Forest Health

Insect and Disease Observations—July 2013

Department of Forests, Parks & Recreation
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Insects

Saddled prominent caterpillars have been observed on trees in North America Maple Project (NAMP) plots in Danby, Arlington, Shrewsbury, Mount Holly, Glover and elsewhere. Raining frass, heavy at times, as well as defoliation and feeding larvae have been reported from forested and ornamental locations. Feeding by saddled prominent continues into early August, so additional defoliation is expected. During our statewide aerial survey in August, we will be mapping any defoliation we see. Look for the window-feeding of the young caterpillars. Color variation is only common in heavy populations. Defoliation tends to start at upper elevations, in areas of beech and/or sugar maple.



Saddled prominent caterpillars can be variably patterned, but most have a V-shaped "saddle."
Photo: R. Kelley

If a ridge-top is infested, anticipate defoliation downslope in subsequent years. Outbreaks are unstable. Areas often sustain complete defoliation where no damage was observed the previous year. Infestations often collapse suddenly, as well. This is an insect to watch closely. Following the last outbreak (1979-81) hardwood decline was significant on some sites.

The defoliation and browning caused by an **oak defoliator complex** since 2008 along the interstate between Montpelier and Waterbury is obvious again. The damage is the result of feeding by the **oak leaf tier** and a combination of other leafrolling caterpillars. Trees in shallow, exposed sites will likely continue to experience some dieback and mortality.

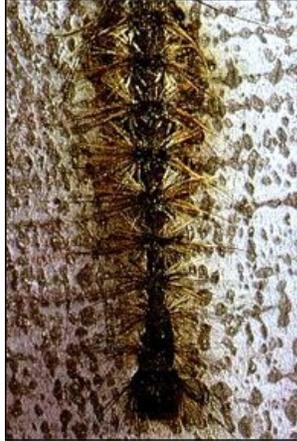


Adult oak leaf tier moths have yellowish-brown bell-shaped wings with wingspan of about 12 mm. Eggs overwinter on twigs. Photo: J. Hanson (Budwood.org)

Japanese beetles are having a banner year, and **viburnum leaf beetles** remain active. Imported **willow leaf beetles** have been observed.

Caterpillars such as the **definite-marked tussock moth** and **maple trumpet skeletonizer** are now feeding on sugar maples.

Gypsy moths are now in flight. Prior to pupation, it was not unusual to run across gypsy moth caterpillars, but, as noted by several observers, defoliation was minimal and gypsy moth caterpillars appeared to be infected with the fungal pathogen *Entomophaga maimaiga* or *nucleopolyhedrosis virus* (NPV).



Gypsy moth caterpillars killed by nucleopolyhedrosis virus (left) and *Entomophaga maimaiga* fungal pathogen (right). Note the inverted V shape of the NPV victim and the vertically-hanging caterpillar with prolegs extended laterally that is typical of fungal infection. Photos: S. Katovich (Bugwood.org) and D. Specker



Maple trumpet skeletonizer larvae feed from early July through October, making trumpet-like tubes of silk and frass on undersides of leaves. Photo: R. Kelley



Christmas tree growers in Walden and Stannard reported that infestations of **balsam twig aphid** were the most severe they'd ever seen.

Balsam twig aphid causes characteristically-curved needles. Photo: R. Kelley



Spindle-shaped galls on branches of red and pitch pine are initiated by larvae of the **pine gall weevil**. Flagging of infested branches is a common result.

Galls of pine gall weevil first appear as slight swellings on one side of the stem, but surround the entire stem as they continue to grow. Photo: R. Kelley

Speaking of **galls**, though many are of relatively little importance to the health of the host tree, they provide

interesting curiosities for those who find them. Two recent reports from Springfield included galls found on the top of ash leaves, caused by the **ash bullet-gall midge**, and growth irregularities of young stems and petioles of hickory leaves, caused by the **hickory leaf stem aphid**.



Galls initiated by ash bullet-gall midge (top) and hickory leaf stem aphid (below). Photos: L. Hyche (Bugwood.org)

Weather

We can't ignore the weather! After a soggy June, July was off to a dismal start with more rain nearly every day for the first several days. Precipitation, sometimes heavy, meant days of flash flood watches and warnings with several areas of the state hit with torrential rains and washed out roads. Overall, July has been wetter than normal by up to 6" in some locations. The wettest areas of the state are Addison, Orange and Windsor counties.

Weeks 2 and 3 featured a hot, humid, showery pattern with some severe weather for added interest. Matt Sutkowski (*Burlington Free Press*) in his [Weather Rapport](#) blog wrote: "It was the first time since 2002 Burlington recorded five consecutive days in the 90s. It was only the 13th time since 1886 there had been those five consecutive days, according to the National Weather Service in South Burlington."

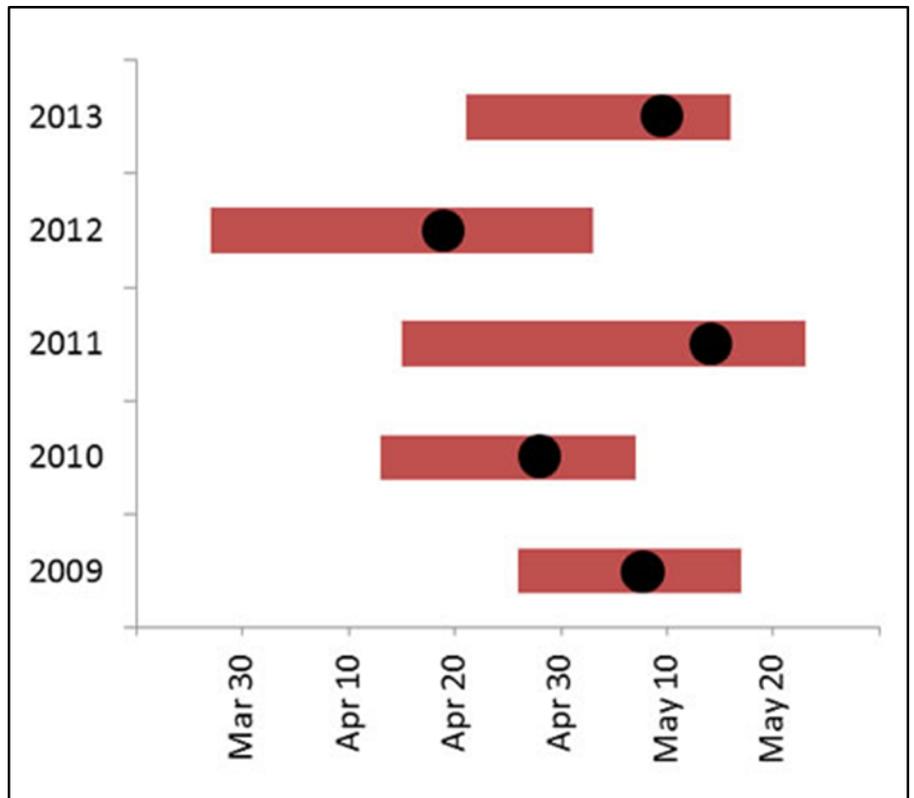
The July 15-19 heat wave was also recorded at the Vermont fire weather stations in Danby and Essex and a 3-day heat wave from July 17-19 at the Nulhegan Remote Automatic Weather Station (RAWS) in Brighton.

This hot and humid weather pattern brought days of scattered severe weather activity. Most notable was a [severe storm and wind event](#) that occurred on July 19. After this storm, temperatures moderated and we saw a brief stretch of dry sunny hay days with comfortable temperatures.

Phenology

As part of the USA National Phenology Network, VT FPR's Tom Simmons has been documenting phenological development of cloned lilacs in Vermont for many years. The combined observations of national cooperators make it possible to see how much the timing of first open flowers varies from year to year.

The graph below summarizes the dates that open flowers were first reported across all sites by year. Flowers opened exceptionally early in 2012, and the onset of flowering was earlier in 2010 than in the other three years. Further, flowering ended sooner in 2010 and 2012 than in the other years. Both 2010 and 2012 were characterized by earlier warm temperatures than the other years in much of the US.



Reported dates of first flower for cloned lilacs (2009-2013). Red bars span the dates of first flower most commonly reported in a year (ends of bars are 25th and 75th percentiles). Black dots represent the median date, or the date that fell in the middle of all dates for first flower reported.

Diseases

Some trees and plants are showing signs of **leaf scorch** after being saturated and then exposed to very hot, sunny weather. Trees in very wet and flooded sites are showing **early color**. **Premature leaf drop** on serviceberries may be attributed to the extended wet spell. **Very thin crowns** have been noted on some red maples as a result of the heavy seed production.



Anthrachnose often begins with large tan-brown blotchy areas between the major veins. These areas eventually coalesce. Photo: P. Bachi (Bugwood.org)

A number of fungi cause what is commonly known as **anthracnose** on hardwood species in our area. This year, the disease is widespread on sugar maple and oak. Anthracnose is causing significant browning and premature defoliation of hophornbeam in Franklin and Chittenden Counties, where trees on dry ridgetops seem particularly hard hit. One

landowner reported that trees shaded by an overstory are not as affected.



Early and late expression of balsam fir flagging in Nova Scotia. Photo: M. Wright

Maple and boxelder have sported a few cases of **Cristulariella leaf spot**, also known as target, zonate or bull's eye leaf spots. Concentric rings and dark margins give the spots a target-like pattern. Affected leaves may fall prematurely. The leaf spots are most common in shady locations.

Noticeable yellowing of new foliage on fir saplings by **fir-fern rust** has been noted. Hawthorn trees with extensive browning and leaf drop, probably from **rust**, have been observed in Addison County. Isolated instances of **verticillium wilt** on catalpa and sugar maple were reported.

In our June update, we mentioned regional reports of **balsam fir branch flagging**, but the causal agent had not been identified. Affected balsam fir foliage from Nova Scotia is being studied at the analytical lab in Guelph, Ontario. Two suggested causes are *Diplodia pinea* (also known as Diplodia tip blight) and *Delphinella abietis* (Delphinella shoot blight).



Browning of leaf margins is typical of leaf scorch. Photo: Minnesota Department of Natural Resources



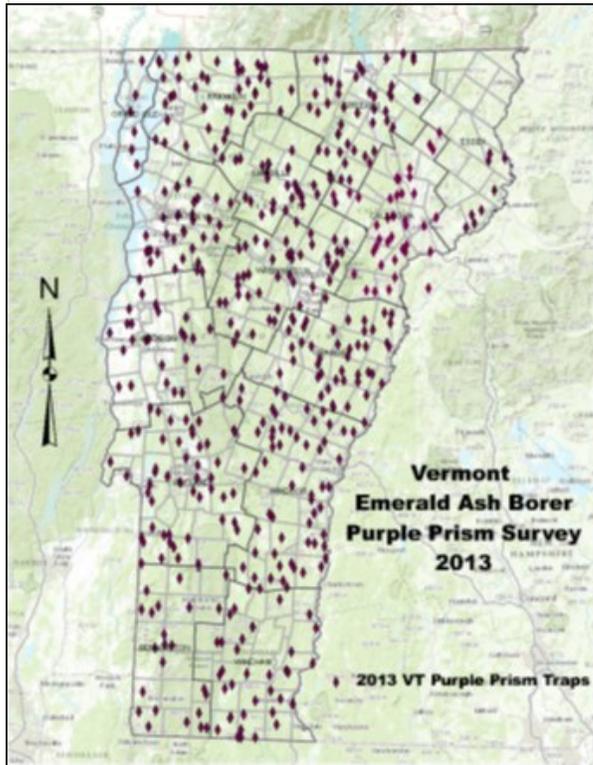
Target-like appearance of Cristulariella leaf spot. Photo: Purdue University

Exotic Plants and Insects

An interesting observation was made at a site in Westminster where aggressive attempts have been underway for controlling the exotic invasive plant known as **glossy buckthorn**. This year, landowners noticed that there were lesions, chlorosis and general malformations on many of the leaves of a large number of the plants around their fields. Laboratory analyses by Isabel Munck (US Forest Service pathologist) and VT FPR's Kathy Decker revealed the aecia (fruiting bodies) of **crown rust of oat**.



Aecia of crown rust on petiole and overall appearance of infected buckthorn. Photos: B. Guenther and J. Shumlin



Mid-season checks of the 438 purple pheromone traps deployed in Vermont to help survey for **emerald ash borer** are nearly completed, with no EAB found so far.

Biosurveillance for EAB through observing *Cerceris* wasps is going well, with seasoned and new volunteers joining the project this year. We've discovered some new nest sites; some nest locations appear more active than in past years. As in the past, some nest sites are no longer viable due to site disturbance and other factors. So far, no *Cerceris*-captured EAB have been seen.

The efficacy of biosurveillance for detecting EAB was exemplified once again on July 19, 2013, in Sherman, CT, (the northernmost town in Fairfield county), when a *Cerceris* wasp brought in an EAB. This was a surprise to folks in CT because the nearest known infestations were in Southbury, CT (also a *Cerceris* find) and along the Hudson in NY state.

Eighteen pheromone traps for **Asian longhorn beetle** have been set in Vermont this year. The traps will be serviced every two weeks through September. No ALB have been found.

Location of EAB traps. Map: Rhonda Mace, USDA APHIS, VT



For more information, contact the Forest Biology Laboratory at 802-879-5687 or:

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