

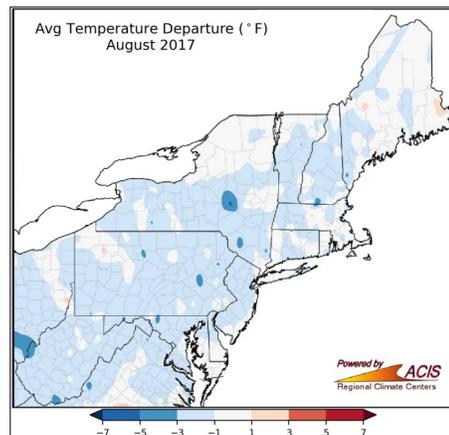
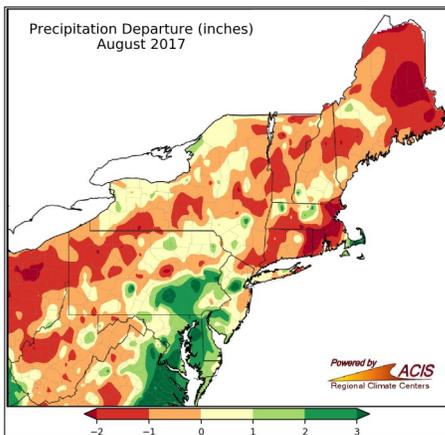
Vermont Forest Health

Insect and Disease Observations—August 2017

Department of Forests, Parks & Recreation
August 2017 vtforest.com

August Weather

Despite many cloudy, showery days this August, the month finished on the dry and chilly side. Precipitation was below normal statewide. Temperatures also averaged below normal for all of the state except the northwestern corner where temps were just above normal.



August precipitation and temperature departures. Maps: [Northeast Regional Climate Center](http://www.norc.cornell.edu)

Hit-or-miss storms caused scattered, localized damage to trees and powerlines during much of the month with some isolated brief heavy rain, wind, lightning and hail. One of these quick moving

storms on August 12 caused some scattered damage to trees and powerlines in Addison County, Williston and Jericho in Chittenden County and in Orleans County.

Again on August 22, strong storms swept through Vermont causing more scattered damage. Reports included roofs torn off a small barn and a larger structure in Waltham, heavy rain and street flooding in Burlington, powerlines down in Franklin and Monkton, and trees down in St. Johnsbury.

On August 21, sunny skies in Vermont allowed an unobstructed view of a partial solar eclipse. A full solar eclipse was visible across the country with the path of totality stretching from Oregon to South Carolina.

Eclipse fever was short-lived, however, when category 4-Hurricane Harvey made landfall in Texas on August 25. While the storm system stalled over Texas and dumped nearly 50 inches of rain (before coming ashore again in Louisiana as a tropical storm with 26 inches of rain there), a blocking high pressure system over the northeastern U.S. brought dry and chilly weather to Vermont and the northeast. Temperatures felt more like fall, a September preview. Plenty of early fall color was observed by mid-August in stressed trees.

Christmas Tree Pest Report

Delphinella shoot blight (the “purple needle eater”) was extremely heavy in scattered northern and north-central Christmas tree plantations this year. Blight was seen on balsam and corkbark fir. Some 10-12 foot tall balsams in East Hardwick were so badly hit that they looked as though they had been sprayed with herbicide.

Armillaria root rot continues to be a problem in many plantations where there has been a buildup of old stumps, particularly prevalent for Fraser Fir and for choose-and-cut plantations.

Phytophthora root rot remains an issue for many growers, especially when Fraser Fir is planted on soils that are not well-drained. One such grower in Walden had 100% mortality of young Frasers in one field, many of which had been planted a little too deep, exacerbating the problem.



Left, *Delphinella* shoot blight kills current year needles, and in severe cases, entire shoots. **Center**, *Armillaria* root rot is of particular risk in trees planted in sites where old stumps remain. This shot shows mycelial fans and mushrooms on dying a Christmas tree. **Right**, *Phytophthora* produces motile spores that swim in water and are attracted to elongating or wounded roots. They infect the root, eventually causing cankers to form that can girdle the trunk and kill young trees. Disease hazard is highest in low, wet areas. Photos left and center, R. Kelley; right, [J. Okono](#).

Broom rust of fir continues to be widespread and heavy in many locations. Growers are advised to prune out the brooms in early spring and kill the chickweed alternate host.

Lirula needlecast on balsam fir is becoming a lot more widespread in plantations where only a few scattered trees were noticed in the past.

Diplodia shoot blight caused scattered tip mortality of balsam fir in numerous plantations throughout the state due to an extremely wet spring. It was also seen on Canaan fir.

Fir-fern rust was widespread but not very heavy.

Balsam shootboring sawfly damage to balsam and Fraser fir was the heaviest seen in many years but still not heavy enough to impact sales.

Balsam twig aphid continues to be common but at mostly light levels.



Left, Balsam shootboring sawfly larva pulled from developing shoot. Photo: R. Kelley, Bugwood.org; **Right**, Curled needles in early spring caused by feeding by balsam twig aphid, Photo: S. Katovich, Bugwood.org.

Balsam gall midge damage was heavy on a few trees in a Middlesex plantation.

Balsam woolly adelgid caused heavy gouting to Fraser Firs in Walden and Bennington.



Left, Galled needles initiated by balsam gall midge; **Right**, Gouting caused by feeding of balsam woolly adelgid round buds and branch nodes. Photos: R. Kelley.

Thanks to Ron Kelley for his report on visits made to Christmas tree plantations this growing season. The updated **[Christmas Tree Pest Manual](#)** contains pictures, descriptions and recommendations for many conifer insects and diseases.

....Speaking of conifers, **Heavy Seed** has been observed on white pine, balsam fir, white spruce and northern white cedar.

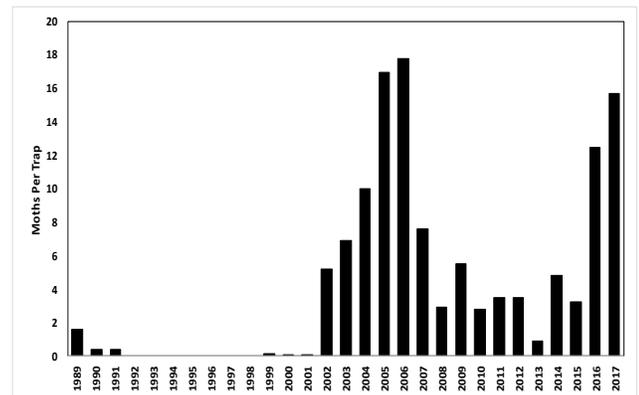
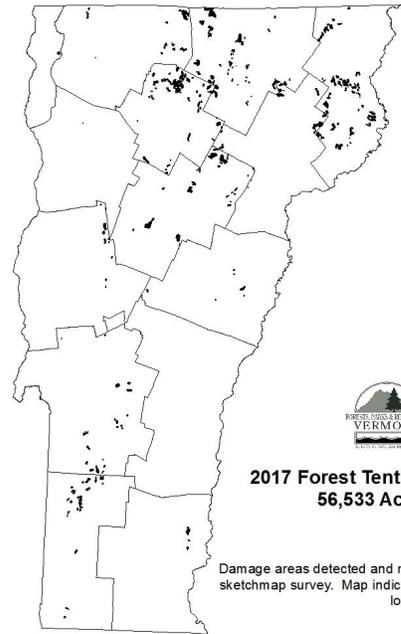
New Info on Forest Tent Caterpillar

VT FPR's [Forest Tent Caterpillar Update](#) has been revised, including the following new information:

Aerial survey results are now complete, with 56,533 acres of defoliation by FTC mapped. The data are available on the [ANR Natural Resources Atlas](#). Click on "Layers" at the bottom of the left hand sidebar. Click the "+" sign next to Forests, Parks and Recreation. And then click on "Forest Tent Caterpillar Damage". To see the Legend, click the icon between the check box and the layer name. Users are reminded that this information is sketched at speeds of over 100 mph and can be incomplete, since observers can't see under the plane or behind hills.

This year's forest tent caterpillar pheromone traps have been evaluated, and the average number of moths per trap went from 12.5 in 2016 to 15.7 in 2017, indicating we should expect widespread defoliation again in 2018.

The moth trap catch increased somewhat in 2017, indicating that defoliation will continue in 2018.



Apple Issues

Cedar apple rust on crabapple is apparent in some areas. Ann Hazelrigg at UVM Extension says that since it was cool and wet when the juniper fruiting bodies were active, lots of spores were dispersed for a longer time period. The result may be more damage on crabs, one of the alternate hosts. She also reported seeing a lot of defoliation on crabs this year from **apple scab**. The very rainy conditions were perfect for scab. According to Ann, trees will be fine next year, but gardeners should prune trees this winter to open them up to light and air. This will help reduce leaf wetness next year.

Top, Loss of leaves on fruit bearing trees due to cedar apple rust can reduce vigor and decrease fruit production. **Bottom**, Apple scab affects foliage and fruit. Photos: J. Chatfield, Ohio State University, [Bugwood.org](#); J. OBrien, USDA Forest Service, [Bugwood.org](#)

Watch List Species: Japanese and Butterbur Sweet Coltsfoot

In New England, there are multiple sweet coltsfoot species, Genus *Petasites*, including the invasive Butterbur sweet coltsfoot (*Petasites hybridus*), Japanese sweet coltsfoot (*Petasites japonicus*) and native Northern sweet coltsfoot (*Petasites frigidus*). The native sweet coltsfoot species, which is ranked as 'rare (imperiled)' in Vermont, can be confused for an introduced species, coltsfoot (*Tussilago farfara*).

Petasites belong to the aster family (*Asteraceae*). *P. japonicus* is native to China, Korea, and Japan, and *P. hybridus* is native to central Europe, Scandinavia, and northwestern parts of Asia. The genus name comes from the Greek word, petasos, a wide brim farmers hat in ancient Greece. This alludes to the giant-sized leaves both invasive plants produce each year.

The invasive *Petasites* are large herbaceous perennials that are mostly planted in herbal gardens or as ornamentals. Most populations that are discovered in North America are suspected to be garden escapes. *P. hybridus* was first confirmed in Vermont in 2009, but has been in New England since the late 1800's. *P. japonicus* has an unclear history in New England, but was confirmed in Vermont in 2016.

These invasive plants have large leaves that shade out any other vegetation, and spread aggressively by rhizomes, which can recolonize from fragments. This documented behavior, and its continued spread in Vermont are reasons these species are listed on Vermont's unofficial invasive plant "Watch List".

These *Petasites* species invade wetlands, forests, forest edges, bogs, marshes, and other semi-shaded moist areas, though there are reports of *Petasites* in Vermont growing in full sun at elevations above 1400'. Flowering stalks appear first in the spring before leaf out. Male and female flowers appear on separate plants (dioecious), and are shorter in height than the leaves. Leaves are large, heart-shaped, and up to several feet wide with toothed margins. The most effective way to tell the plants apart are with the flowers, where *P. hybridus* has pinkish red flowers and purple bracts (modified leaf), while *P. japonicus* has white/light yellow flowers with green bracts. These plants can reach heights of 6' or more.

To learn more about *Petasites hybridus* and *Petasites japonicus*, check out these resources: Missouri Botanical Garden, State of Michigan, Michigan Invasive Species, and Wisconsin Department of Natural Resources.



Left, Japanese sweet coltsfoot (*Petasites japonicus*) on Lincoln Gap Road in Warren, Photo: A. Marcus, VT F&W and Green Mt & Finger Lakes National Forest; **Right**, Butterbur sweet coltsfoot (*Petasites hybridus*). Photo William M. Ciesla, Forest Health Management International, Bugwood.org

Also Observed

Cherry scallop shell moth is apparent on understory black cherries in some parts of the state. Young larvae construct a tube-like nest by webbing together leaf margins. Photo: R. Kelley



Maple leafcutter mines and cases, like these observed in Sutton, are obvious on understory maples in many areas. Larvae feed on the leaves of maple and sometimes birch, cutting circular portions out of leaves and connecting them to form a portable case. Photo: T. Greaves.



Locust leafminer feeding, currently seen in many road-side locusts, can make trees look like they have been "assaulted with a blow torch." Photo: W. Cranshaw, Colorado State University, Bugwood.org



Hickory tussock moth caterpillars feed primarily on the leaves of nut trees (hickory, pecan and walnut), but will also eat other deciduous trees and shrubs, including ash, elm, oak, birch, willow and raspberry. Photo: [A. Yuuki](#)

Giant tarspot is particularly severe in southwestern Vermont. Some are wondering if the level of disease on Norway Maples in Old Bennington this summer will result in one less invasive species in the Village.

Contributors to a recent issue of Cornell's *Branching Out* wrote: "...no matter what the weather is like in 2018, there will be little if any disease next year... When massive infection occurs in a given year, the fungus kills the leaves so fast that the fungus doesn't get a chance to produce fully "ripe" spore bodies.

Furthermore, infected leaves ...are shed early and are then covered up by leaves of other trees. So even if those overwintering leaves do produce spores next spring, their being buried under other leaves prevents the pathogen from going anywhere." Photo: Karen Snover-Clift, Cornell University, Bugwood.org



Scattered light **fall webworm** damage is obvious in roadside trees through the state. This insect feeds on more than 100 species of forest and shade trees. Photo: S. Katovich, USDA Forest Service, Bugwood.org



The **short-winged blister beetle**, *Meloe angusticollis*, which resembles a giant, metallic ant, is commonly found this time of year, occasionally in groups of 5 or more. The adults eat herbaceous plants and are often associated with potatoes. The immature stages (larvae) prey on bees. Photo: S. Molloy

The **red-headed flea beetle**, *Systema frontalis*, which feeds on a number of ornamentals including rose, weigela, forsythia, euonymus, hydrangea, and hollies, has recently been observed in nursery settings in Vermont. Photo: [C. Joll](#)



Net-winged beetles, like the one shown here, are found on flowers and vegetation near water. Larvae feed on insects found in rotten logs, under loose bark and, sometimes in soil or leaf litter. Photo: [J. Boutin](#)

Eclipse Eacles. This pre-pupal **pine imperial moth** caterpillar, *Eacles imperialis pini*, was observed on August 21st, the day of the solar eclipse, in a Bristol driveway. Photo: [D. Folino](#)



Make some noise! This newly-emerged **northern dog-day cicada**, (*Neotibicen canicularis*) was observed and photographed at Ethan Allen Park in Burlington. [How do cicadas make sounds?](#) With tymbal organs (drum-like abdominal membranes), wing flicks, wing clicks, and stridulations (rubbing body parts together). Photo: [B. Boccio](#)



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

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