

# Vermont Forest Health

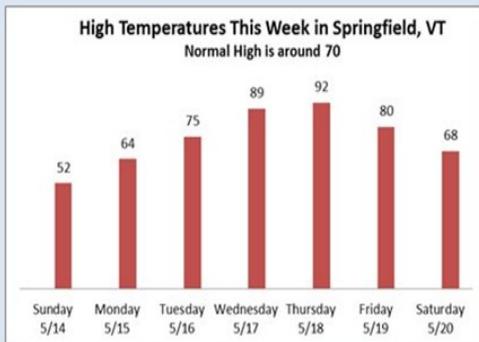
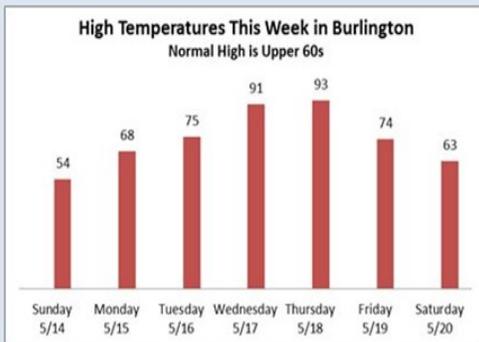
## Insect and Disease Observations—May 2017

Department of Forests, Parks & Recreation  
May 2017 [vtforest.com](http://vtforest.com)

### May's the Drought Buster!

Last year's drought hung on in parts of Vermont despite a snowy winter and damp April. The last abnormally dry area along the Connecticut River Valley in Windsor county finally received enough rain to take it out of drought. That was on May 2. The rain through the rest of the month has been insurance!

Over all, May was a chilly month feeling more so from lack of sunshine. All but the northwest corner of the state was below normal. There were exceptions, however. The week of May 14, had the most variability. High temperatures in Burlington fluctuated from 54° on May 14 to record breaking 90's on the 17th and 18 and back into the low 60's by the end of the week. Elsewhere in the state saw similar variations except that temps were cooler on the 14th in higher elevations and warmer on the 20th in lower Connecticut River valley.



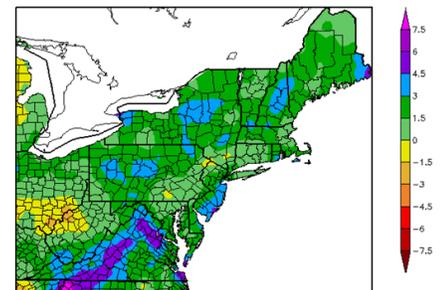
*The week of May 14 temperatures swung from the 50's to the 90's then back to the 60's. Graphs: [NWS](#); Map below: [Northeast Regional Climate Center](#)*

May was wetter than normal and gloomy overall. In fact, only 11 days in Burlington or 15 days in St. Johnsbury during the month were rain free. The rest of the state fell somewhere in between. Burlington also keeps track of monthly cloud cover. Only 2 days in May were fair, 14 were partly cloudy and 15 were cloudy.

Much of the rain this May has been light, amounting to less than a tenth of an inch on most of these rainy days. However, there were a few severe storms as well.

On May 5, a sudden, severe windstorm knocked down trees and powerlines leaving 15,000 without power mostly in Rutland and Bennington counties. Green Mountain Power shut off the electricity in the region due to so many downed lines.

Departure from Normal Precipitation (in)  
5/1/2017 - 5/31/2017



This unusual storm called a “gravity wave” produced hurricane force winds, with gusts up to 74 mph in Wells, 61 mph in South Pomfret and 56 in Mendon. Tree damage was substantial, tangling with power lines, blocking roads and damaging houses. High winds and downed trees were also reported from White River Junction, Jericho and Underhill but for the most part this was a localized weather event.

*May 5th storm damage. Large branch breakage to ash tree in Rutland City. (Photo: L. Lund)*



May 8 and 9 brought 1 to 2 inches of snow to higher elevations of the Green Mountains and the NEK and Orange County. Scattered frost damage resulted in some areas where temperatures were well below normal.

On May 18, thunderstorms with strong winds downed trees and powerlines leaving 30,000 Vermonters without power. Hardest hit areas were Bennington, Windham and Addison Counties. High temperatures in the upper 80’s and low 90’s on May 17 set the unstable stage capable of producing these widespread thundershowers.

Damage in Addison County included siding ripped from homes, broken windows, downed trees and powerlines, and a camp ripped off its foundation. Residents were certain it was a tornado. The National Weather Service in Burlington surveyed the damage and determined it was caused by a microburst with top winds hitting 100 mph. Chittenden County and northeastern Vermont reported torrential rain and downed trees and powerlines.

Another severe storm on May 31 saw hail, high winds and rain. Hail was reported in Swanton, Mallet’s Bay, Burlington, Colchester, Shelburne, Addison, Hardwick, North Walden, Sutton, Barnet, Lyndonville, Pittsfield. Downed trees in Colchester, Vergennes, Richmond, Duxbury (also downed powerline and blown transformer), Stowe, Castleton, St. Johnsbury, Waterford, and Concord.

And for those who have been wondering, snow depth on Mt. Mansfield reached zero as of 4:00 pm on May 24th, with the last 3 inches melting during the previous 24 hours.

## Storm Aftermath

Following the May 5th windstorm, there were reports of wind-damaged white pine stands. The Ips beetles that carry blue stain fungi can be a concern in these settings. If the weather is warm, within a week, pine engravers start to lay eggs in severed pine tops and blue stain is already visible. The cool weather this spring may have slowed down beetle activity.



*Evidence of bark beetle presence includes exit holes in bark. Blue stain fungi devalues lumber and can hasten the death of a tree. Photos: [S. Katovich, USDA Forest Service](#), [Bugwood.org](#); [Univ. of Illinois](#)*

## Forest Tent Caterpillar Update

If you've been following forest health, you know that 2016 was the first year of a Forest Tent Caterpillar (FTC) outbreak in Vermont. Outbreaks typically last several years, and we expected an increase in 2017. More information is in our [Forest Tent Caterpillar Update](#).



*FTC hatched over a period of several weeks, resulting in a range of caterpillar sizes. By the last week of May, some trees were heavily defoliated, but feeding was variable from tree to tree.*

By the end of May, caterpillar activity had been observed statewide, including some moderate feeding. However, heavy defoliation had only been reported from regions in northern Vermont where there had been defoliation in 2016. Within those regions, the defoliated area included forest stands and sugarbushes that were not defoliated last year. Dieback and off-color leaves have been observed in a few locations where defoliation was heavy last year and trees were under stress from other factors.

FPR monitored leaf development, caterpillar hatch, and defoliation at four sites in northern Vermont. Hatching was first observed during the last week of April and continued into early May. Cold weather slowed hatch and leaf development, but not for long. The week of May 14<sup>th</sup>, warm temperatures made a huge difference over a three day period, and then cool weather slowed everything down again. By the last week of May some trees were 80 - 90% defoliated, although there was substantial variability from tree to tree. By the end of the month, defoliated areas could be detected on the landscape, and hungry caterpillars were observed feeding on understory beech, ferns, and hobblebush.

By request, FPR has been assisting sugarmakers concerned about FTC, as described in our [April 2017 Insect and Disease Observations](#). Of the 64 sugarbushes surveyed, 18 landowners chose to have their trees treated with Foray 48B, a *Btk* product that is registered for use in certified organic production. Treatments were conducted on May 21, 27 and 28. FPR will be visiting treated areas to assess efficacy. Sugarmakers interested in having their property surveyed for FTC egg masses should contact Josh Halman at [josh-ua.halman@vermont.gov](mailto:josh-ua.halman@vermont.gov) or 802-279-9999.

Wet springs can promote diseases of caterpillars that bring an early end to outbreaks. We have not seen this so far, but will continue to look for signs of FTC diseases. The ample water should benefit the ability of trees to recover.



FTC will continue to feed through the month of June. In July, FPR staff will conduct aerial surveys to map defoliation.

*Hungry caterpillars were observed feeding on understory beech. State-wide assessments will involve defoliation surveys, pheromone trapping for moths, and performing egg mass counts. (Photos: T. Greaves and R. Kelley)*

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## Red Pine Decline

Red Pine Decline has been in the news this spring. The decline has been increasing for at least ten years, with 743 acres of red pine decline mapped during aerial surveys last summer. The symptoms begin with red-brown shoots scattered in the crowns, and progress to branch and tree mortality. Hot spots are much of Orange County plus nearby towns in Washington and Caledonia Counties, and an east-west swath through Rutland and Windsor Counties centered in the Shrewsbury/Mendon area.

Although research is ongoing, the non-native Red Pine Scale is the apparent cause. A caution is that this hard-to-detect insect has only been confirmed to be present in two of the declining stands. Also known as the "Japanese pine bast scale" (bast = phloem), cold temperatures had prevented this insect from moving into northern New England until recently. Contrary to some news reports, we do not know that the insect spreads fungi or any other tree disease organisms. However, this possibility is under investigation for the closely-related (and native) white pine bast scale.



*Foliar symptoms of red pine decline include scattered red-brown shoots. Branches become affected and tree mortality follows. (Photos: B. Schultz)*

Red pine has an admittedly small footprint within Vermont, and natural red pine forests are uncommon. We recently revisited old plantation records, from a survey done in 1978, in response to an inquiry about the importance of red pine. This confirmed that red pine had been widely planted, mostly in very small plots, although occasionally in areas up to 50 acres in size. For example, in the town of Tunbridge there were 77 acres of red pine in 48 different plantings established between 1919 and 1974. In Strafford there were about 67 acres in 32 different plantings.

There is a chance of moving red pine scale around with logs if they're from an area where the insect is confirmed or suspected to be present. Things that reduce risk are moving logs in the winter when there are no scale crawlers present and making a point to have log loads and equipment free of branch material before they are moved. Our experience with hemlock woolly adelgid, which also feeds on shoots and has a crawler life stage, is that it moves from place to place more commonly on live trees and birds, but implementing these practices should be helpful in reducing spread.

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## Spotlight: Shrub and Vine Honeysuckles

The honeysuckle family (Caprifoliaceae) has hundreds of species that are woody shrubs, herbs, or vines. In New England, there are many members of the honeysuckle family, including native plants like American honeysuckle (*Lonicera canadensis*), wild honeysuckle (*Lonicera dioica*), and American twinflower (*Linnaea borealis*). However, several species of the genus *Lonicera* are invasive in Vermont, including Amur honeysuckle (*L. maackii*), Morrow's honeysuckle (*L. morrowii*), Tatarian honeysuckle (*L. tatarica*), Bell's honeysuckle—a hybrid of Morrow's and Tatarian—(*Lonicera x bella*), dwarf honeysuckle (*L. xylosteum*), and a vine called Japanese honeysuckle (*L. japonica*).

Each of these invasive honeysuckles are listed on Vermont's Noxious Weed Quarantine, as Class B Noxious Weeds. This ranking means that they are not native to the state, but are present, and pose a serious threat.

The strongest impact from shrub species is their tendency to form dense stands that exclude native forest understory plants. The invasive vine honeysuckle tends to dominate in the forest understory (especially in the southeastern U.S.), and can cover and topple trees.

Honeysuckles were introduced from Europe and Asia in the 1800s, primarily as ornamental plantings. In the 1960s, invasive honeysuckles (in particular, *L. maackii*) were also utilized for erosion control and wildlife cover, and remained in use for several decades before the full invasive nature of these plants was realized.

These are perennial plants, and have green, oval-shaped, oppositely-arranged leaves. *L. japonica* can reach 80' in length, with white to yellow flowers turning to small black fruit in the fall. The shrub species can grow from 6-20' in height, with white, yellow, and pink/red flowers turning to twinned fruits in the fall that are orange to red.

One way to differentiate invasive shrub honeysuckles from Vermont's native honeysuckle is to compare the center of the stem (pith). *L. canadensis* has a solid white pith, whereas all the invasive shrub honeysuckles have brown, hollow piths.

To learn more, check out: [GoBotany](#), the [Vermont Agency of Agriculture, Food & Markets Noxious Weed Quarantine](#), [DCNR Pennsylvania](#), and the [Invasive Plant Atlas of New England](#).



Flowers and leaves of invasive honeysuckles, including [Morrow's](#), [Amur](#), [Tatarian](#), [dwarf](#), and [Japanese](#) honeysuckles. Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

## More on Maple

Though many are familiar with [maple leafcutter](#) and the unique damage caused by larvae, fewer may have observed the adult lifestage of this insect, present in May, a showy metallic blue moth with an orange punk-rock hairdo, which mates and lays eggs as leaves open.

[Pear thrips](#) numbers in our monitoring plot at Proctor Maple Research Center (PMRC) in Underhill are up compared to the last 2 years. As of May 26, 327 adult thrips had been trapped, while counts were under 200 for each of the last two years. Some foliar damage due to thrips was noted at PMRC but it was mixed with frost, Bruce spanworm, and maybe some light FTC. With this slow spring, there have to be places in the state where maple bud development stalled at exactly the time they are most susceptible to thrips injury. Some thrips damage was observed in the Springfield area, but the early May frost has affected leaves as well. Oviposition scars (bumps on the leaf stalks and veins) are a good way to distinguish thrips damage from frost. They say that pollen increases thrips fecundity. The heavy flower production in maples this year suggests there will be a lot more thrips next spring.

Leafrollers, like the *Olethreutes nigranum* shown below on maple, roll and fold leaves together to form a protective tent. The adult moth is pictured at this [link](#).

Erineum is an abnormal felty growth of hairs from the leaf epidermis of plants caused by eriophyid mites. Depending on mite species, erineum may be specific to the upper or lower leaf surface, and color of the erineum can be modest or [showy](#).



Maple leafcutter adult, thrips damage, leafroller and erineum have all been observed on maple this month. Photos: [T. Murray](#), R. Kelley, and T. Greaves.

## Early Symptoms of Black Knot



Unless your ornamental or productive fruit trees are affected, you may not notice [black knot](#) until the galls become large and black and completely encircle a branch. Black knot spreads in the spring. On rainy days, the fungus releases spores which are carried on wind currents. If the spores land on new spring growth of a susceptible tree, and especially if the tree is damp, the spores germinate and infect the tree.

Early symptoms of black knot on cherry. Photo: L. Lund

## Grab Bag of Bugs

Mass emergences of adult [Bibionid flies](#) have recently intrigued a handful of observers. Also known as March Flies (though they rarely emerge that early in our area), the adult flies sometimes occur in enormous numbers. These flies are related to the “lovebugs” (so-called because they are often seen in pairs) that occur in the Gulf States, sometimes causing travel issues when they cover windshields and roadways. Bibionid larvae feed on decaying organic material.

[Pavement ants](#) also made some “swarmy” appearances in April and May, back when it seemed like summer was on course for an early arrival.

[Millipedes](#), like the colorful “flatbacked” species shown here, and a [firefly](#) larva, were among the organisms observed by readers in May. While the millipede is a scavenger, the firefly larva is a predator, paralyzing, killing, and liquefying the tissues of snails, slugs, earthworms, and small insects with the aid of chemicals pumped through their mandibles.



*March flies, pavement ants, millipedes, firefly larva, and some cryptic caterpillars caught our attention in May. Photos: T. Wall, [T. Murray](#), T. Greaves, J. Hutchings. Caterpillars include a [camouflaged looper](#), and an exposed and hidden [underwing moth](#) caterpillar. Photos: B. Boccio and L. Lund*



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

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