Vermont Forest Health

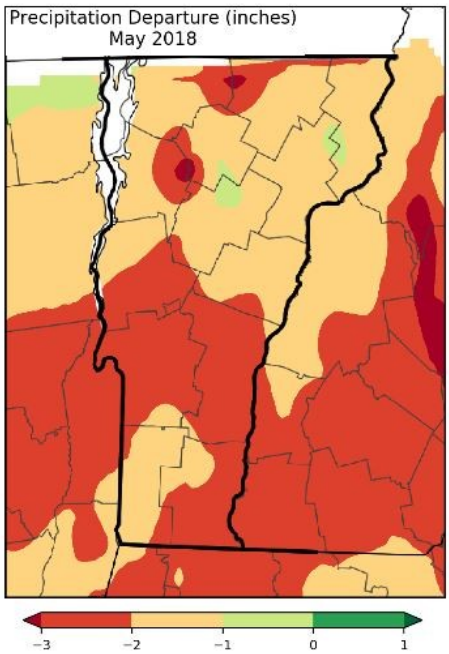
Insect and Disease Observations— May 2018

Department of Forests, Parks & Recreation
May 2018 vtforest.com

Weather Observations

The first week of May saw some wild weather with snow on the last day of April, record-breaking high temperatures two days later, and violent storms finishing the week. Despite the whacky beginning, May averaged warmer and drier than normal.

On May 2, a short-lived temperature spike brought high readings from the low and mid 80's up to 88° in North Springfield and Burlington, breaking the old record set in 2001. Lincoln, Montpelier and Rochester recorded highs of 86°. Temperatures reached 85° near Danville accelerating the ice melt on Joe's Pond. The ice was officially declared out on May 4 at 11:27 AM. This was the latest date since 1994 and the 4th latest date since the ice out contest began in 1988.

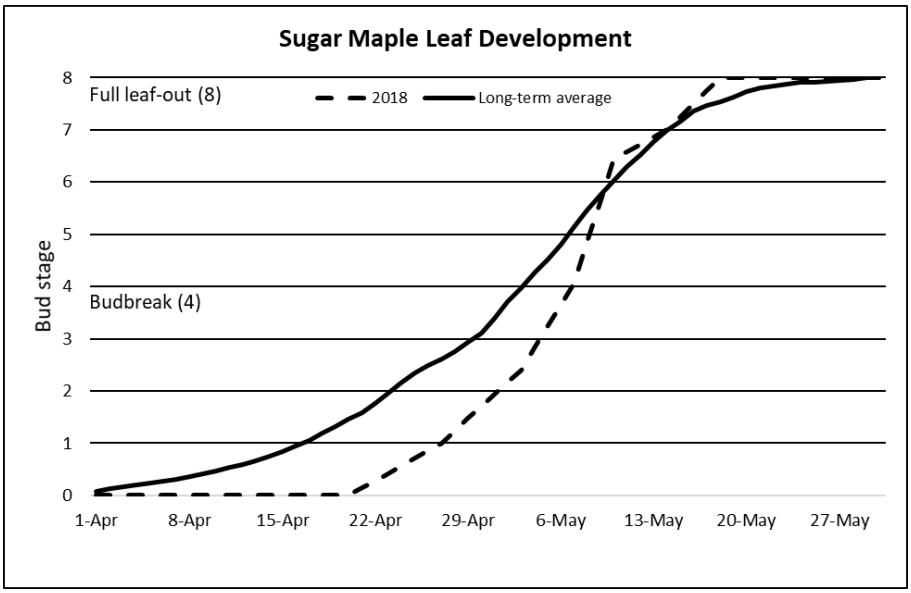


May averaged drier (and warmer) than normal. Map: Northeast Regional Climate Center

Severe storms on May 4 produced strong winds with gusts ranging from 30 to 65 mph, hail, flash flooding, and even the possibility of tornados. None were recorded, but winds did bring down plenty of trees and powerlines. Some hard-hit locations included Shelburne, Brookfield, Pittsford, Ascutney, Thetford, Manchester, Danby, Lincoln, Waterbury and Colchester, but the storms affected all of Vermont. Two inches of rain caused flash flooding along the Winooski River and into the Northeast Kingdom. Route 5A in Westmore was blocked when a landslide came down the mountain surrounding Willoughby Lake.

Green-up was delayed due to a wintry April, extending spring fire season. Light fire activity continued through the month. There was just enough green-mixed-with-dead vegetation to keep fire danger at moderate for most of May. However, fire danger did reach "high" on May 11. A special weather statement was issued by the National Weather Service that day for low relative humidity and strong winds combined with extremely dry dead grass, leaf and brush fuels.

Windy days were common through May and increased the potential of spread for fires that did get started. Such was the case of the largest fire reported this season. On May 14, fire escaped from a brush pile at a residence in Plymouth. Winds spread the flames up the steep slope near the Hawk Mountain Resort development. Firefighters from 8 surrounding towns battled the blaze, which burned approximately 60 acres.



Sugar maple budbreak was observed in Underhill on May 7th. Budbreak was later than normal in 2018, but once buds opened, leaves developed rapidly.

It was an unusual year for bud development. Red maple flowers and beech leaves appeared simultaneously. Warm temperatures at the end of May boosted leaf development, finally greening the landscape. However, foliage at higher elevations, and ash, oak and red maple in northeastern Vermont, had not fully expanded. The month ended up fairly dry, with total precipitation of 1-2" below normal in northern Vermont, and 2-3" in the south.

We continue to monitor sugar maple phenology at our long-term monitoring site in Underhill. Bud development was slower than usual this year due to cool weather in early spring. Budbreak was recorded on May 7th, roughly 3 days later than average. However, once buds opened, leaves rapidly developed and full leaf-out was observed on May 18th.

The outcome of the heavy seed crop, that occurred in 2017 on many species, is now apparent. Mature cones remain visible on white pines, and there is a heavy sugar maple first-year seedling crop in woods and yards. While 2018 looks to be a lighter seed year, with generally less flowering on many species, there were reports of some heavy seed on red maple and heavy flowering on ash.

The complex relationship between climate and sugar maple health: climate change implications in Vermont for a key northern hardwood species is a recent article looking at the potential impact of climate change (using Vermont maple health data). The link below allows free access to the article until June 14: https://authors.elsevier.com/c/1Wxjs1L~GwGcSZ

Thanks to a banner seed year in 2017, there is a heavy crop of first-year sugar maples in the woods and yards.

Emerald Ash Borer

Emerald Ash Borer (EAB) was detected in Montpelier in May. This recent find is a good indication that, as awareness of EAB grows, more places may be found.

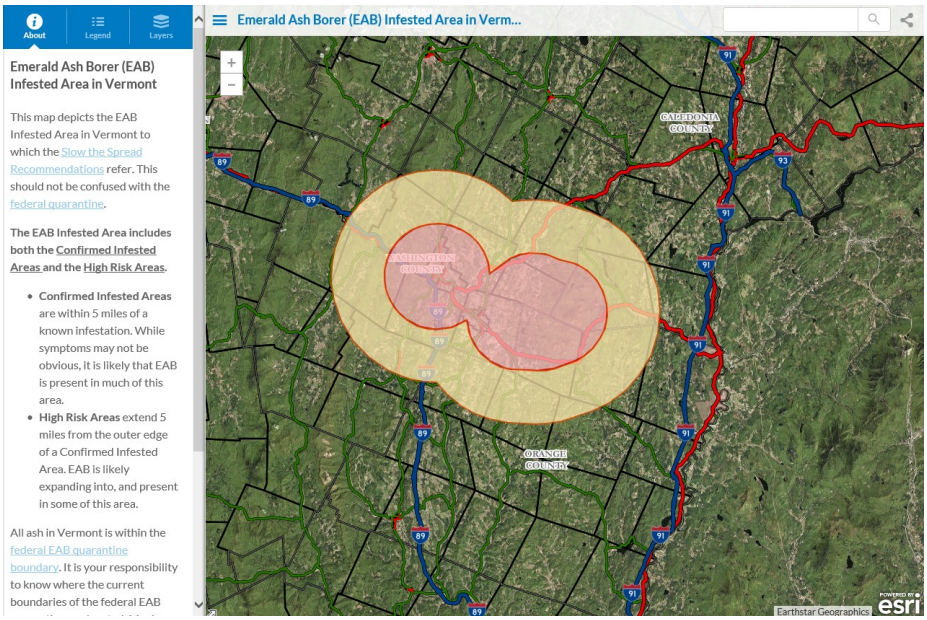
EAB galleries were found on green ash trees in Montpelier. On May 22nd, all the insects collected were in the pre-pupal stage.

The map of the Emerald Ash Borer Infested Area in Vermont is now available online and will be updated with any new confirmed EAB locations. It can be found here - https://vtinvasives.org/land/emerald-ash-borer-vermont. The infested area location is also available on the ANR Atlas http://anrmaps.vermont.gov/websites/anra5/. The "EAB Infested Area" layer is under the Forests Parks and Recreation tab in the Atlas Layers. This mapping function allows you to look at the infested area in conjunction with other layers like parcels or roads.

EAB specimens collected in Montpelier on May 22nd were all in the pre-pupal stage. However, by late May black locusts were blooming in much of the state. This phenological indicator signals that EAB adults could start emerging from infested trees.

EAB was also recently discovered in Maine for the first time in May, adjoining another recent detection in western New Brunswick. More information is in this press release. As of early June, the state of Maine had not released their quarantine plans.

The State of Vermont is now officially part of the USDA federal quarantine boundary. Information on "How to Legally Transport EAB-Regulated Wood Products from Vermont to Non-Quarantined Areas in New Hampshire and Maine" is available at: https://extension.unh.edu/resources/files/Resource007403_Rep10658.pdf. New Hampshire has also proposed updates to their exterior firewood quarantine in response to new EAB detections and other concerns.



A map of the Emerald Ash Borer Infested Area in Vermont is available online at vtinvasives.org and through the ANR Atlas.

We continue to focus resources on developing slow-the-spread recommendations for preventing unintended movement of EAB, and information about ash management. The following resources are available through vtinvasives.org.

Slow the Spread Recommendations for moving material originating within the EAB infested area:

- Moving Ash from the Infested Area regarding the movement of forest products
- Ash Processing Options regarding the treatment or processing of ash material
- Tree Care and Clearing regarding treatment of ash and moving material (wood, branches, stumps, debris, etc.) in tree maintenance and removal

Homeowner and Municipal Tree Resources

- Homeowner's Guide to Emerald Ash Borer
- Emerald Ash Borer Management Worksheet for Vermont Municipalities
- Options for Protecting Ash Trees from Emerald Ash Borer with Insecticide Treatments
- Managing Emerald Ash Borer in Your Municipality: Frequently Asked Questions
- Rapid Roadside Ash Inventory Planning Worksheet
- See additional resources here

Forest Landowners

- Emerald Ash Borer: Information for Forest Landowners
- Use Value Appraisal Standards for Forest Management Related to Emerald Ash Borer Infestations

Outreach

- EAB PowerPoint and Presentation Notes

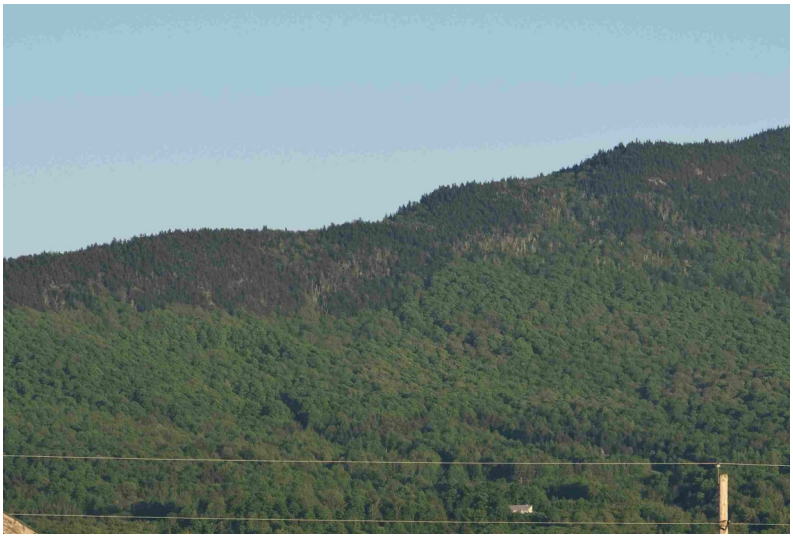
Forest Tent Caterpillar

The Forest Tent Caterpillar (FTC) outbreak continues with reports of some heavy populations in northern Vermont. The late spring delayed defoliation as well. As of late May, defoliation was showing up on hillsides as slightly off-color swaths, but remained mostly low (~5% of crown defoliated in stands with FTC present). Defoliation will progress through the month of June in stands with high caterpillar numbers.

Widespread reports of "the air buzzing with friendly flies" demonstrate that natural enemies are building in response to the FTC outbreak. And they are friendly. One report from a warm day: "I wore shorts and counted 30 on me". Diseased caterpillars have not been widely observed.

FTC defoliation remained mostly light by the end of May. However, populations remain heavy in some areas, and defoliation will progress through June.

Dieback and mortality are being reported in some stands stressed by previous FTC defoliations.



Leaf development was late on some trees, which were still brown in late May. (Photo: R. Kelley)

Also widely reported are defoliation-related impacts to sugar maple health. Budbreak of some sugar maples was delayed in previously defoliated stands, and some trees produced tufted foliage. There are also many reports of more severe impacts, including dieback and mortality, heavy in pockets, and often increasing on steep upper slopes.

This news is troubling, but not unexpected, with abnormally dry conditions throughout the state in 2016, and poor refoliation of FTC-defoliated trees in both 2016 and 2017. An additional factor may be winter weather. We know that fluctuating temperatures last winter had an impact on marginally hardy plants and insects. Defoliation is known to reduce cold-tolerance, especially if refoliation was late the previous year. Recent thinning also increases the risk to tree health.

As mentioned in the April Insect and Disease Observations, 30 properties that FPR staff surveyed for the likelihood of FTC defoliation in 2018 were predicted at-risk of defoliation. Of those, twelve landowners decided to treat their land with *Btk* once conditions were favorable. As of the end of May, six of the twelve had been fully treated with the rest to be completed in early June. The ideal time for treatment is when maple leaves are at least 20% expanded and caterpillars are in the ½-¾ inch size class. This specific treatment is not a contact insecticide, rather, it is applied to leaves which must be consumed for it to be effective, so a small amount of defoliation is necessary.

Other Observations

Early symptoms of Maple Leaf Cutter were widely observed. This is a mid-season defoliator, so more severe damage may be observed later in the summer.

The delayed spring development may explain the lack of White Pine Needle Damage (away from roadsides) in May. By early June, these symptoms, attributed to foliage-infecting fungi, had begun to appear.

Early season damage by maple leaf cutter includes leaf-mining. (Photo: R. Kelley)

Some light damage to sugar maple foliage from Pear Thrips is noticeable in many locations this spring. Accordingly, our trap catches of pear thrips in Underhill are greater than last year as well. The rapid development of sugar maple leaves following budbreak likely prevented additional damage. The final numbers for pear thrips caught this year will be available in the June report.

Winter Injury was reported on balsam and Canaan fir Christmas trees. Sometimes it just affects the most recent year's growth. The sudden temperature changes in the past winter may have injured foliage, where acclimation was lost before the cold set in again.

Moderate foliage damage from pear thrips feeding on sugar maple (Photo: R. Kelley)

Winter injury to fir may have resulted when warm winter weather was followed by sudden cold. (Photo: J. Horst)

Invasive Plant Watch List Species Highlight: Wild Chervil (*Anthriscus sylvestris*)

Many invasive plants in Vermont start blooming from May into June. Keep an eye out for one obvious bloomer this time of year, Wild Chervil (*Anthriscus sylvestris*), or also commonly called "cow parsley", along roads and in fields. This is a biennial herbaceous plant within the carrot family, Apiaceae. In Vermont, there are two introduced *Anthriscus* species documented outside of cultivation: wild chervil and its close relative, garden chervil (*Anthriscus cerefolium*). The name "chervil" comes perhaps from Latin and Greek roots, collectively meaning "leaf to enjoy".

Wild chervil is native to Europe, and was recorded in New England in the early 1900s. Though its original introduction to North America is unknown, it has seen reintroductions over time as a garden ornamental and in seed mixes.

Wild Chervil, a biennial plant in the carrot family, is often found along roadsides.

Often confused for Queen Ann's Lace (*Daucus carota*), wild chervil can be distinguished by a lack of "bracts" (small feathery leaves, which, in this case, are found under the *D. carota* flower umbel). It has a tap root, much like a carrot, and the stems are hollow, hairy towards the base, ribbed, green, and have a fringe of hair at each node.

The densely packed flower umbels produce hundreds of seeds. It spreads by these seeds, outcompeting native plants for growing space and other resources. Reaching heights of 3-6 feet, wild chervil often shades out other plants. This documented behavior, and its continued spread in Vermont, are reasons this species is listed on Vermont's unofficial invasive plant "Watch List".

You reduce the spread of wild chervil by taking these pro-active steps:

- This plant can be a common part of "wildflower mixes", so check the species list before buying.
- If you mow or cut down an area with wild chervil, make sure to clean your mowing equipment. If you are mowing after seed has set (usually after June), you may spread the seed unintentionally on your mower.

To learn more about wild chervil, check out www.VTinvasives.org and these additional resources:

Pennsylvania Department of Conservation and Natural Resources
St. Lawrence-Eastern Lake Ontario Partnership for Regional Invasive Species Management
Wisconsin Department of Natural Resources

The flowers of Wild Chervil are small, white, and possess 5 petals.

They form in clusters called an umbel, almost resembling an umbrella.

Leaves are compound, and have a feathery fern-like appearance.

FORESTS, PARKS & RECREATION VERMONT AGENCY OF NATURAL RESOURCES

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

Windsor & Windham Counties	Springfield (802) 289-0613
Bennington & Rutland Counties	Rutland (802) 786-0060
Addison, Chittenden, Franklin & Grand Isle Counties	Essex Junction (802) 879-6565
Lamoille, Orange & Washington Counties	Barre (802) 476-0170
Caledonia, Orleans & Essex Counties	St. Johnsbury (802) 751-0110

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