Vermont Forest Health

Insect and Disease Observations— May 2019

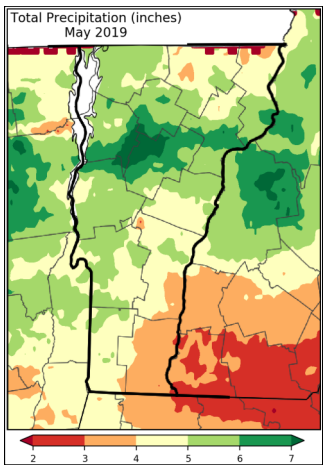
Department of Forests, Parks & Recreation
May 2019 vtforest.com

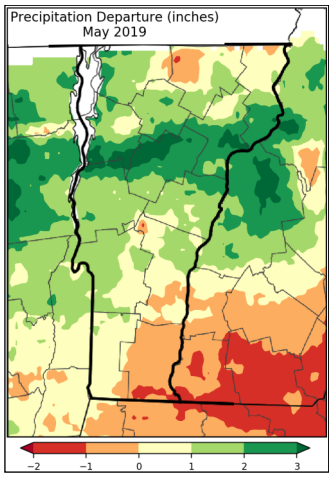
The Month of May Remained Wet and Relatively Chilly

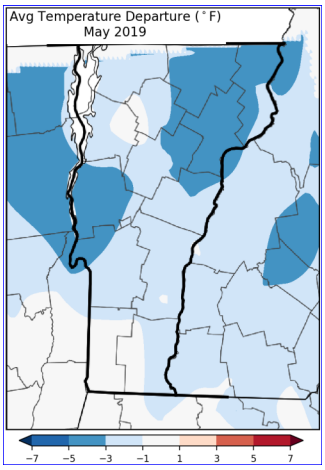
Vermont had some cool, wet episodes this month (or maybe just one long one?), including a May nor'easter that brought four inches of snow to parts of the state on May 13-14. Much of the Northeast continues to deal with unseasonably cold weather and above normal precipitation. A flood warning remained in effect for Lake Champlain, affecting Vermont's shoreline counties from April 21 through May 31.

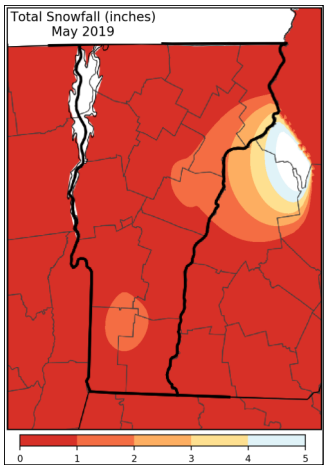
Weather conditions served to reduce fire danger across the region. In Vermont, there have been 11 fires reported to date for a total of 21.1 acres.

Rakes were swapped for snow shovels on May 14th as Vermont State park staff at Woodford State park prepared for opening day. (Speaking of parks, due to high water levels, Burton Island, Sand Bar, Alburgh Dunes and Waterbury Center State Parks delayed opening this year.) Photo: Courtesy of Vermont State Parks staff









Vermont acquired from <2 to >7 inches of rain over the past month. The departure from normal precipitation was most pronounced in the central part of the state. Departure from normal temperatures was a state-wide phenomenon, and there was snow during the month of May. Maps: Northeast Regional Climate Center

Expect Foliage Disease Symptoms in the Months Ahead

Thanks to the wet spring, foliage diseases have been appearing. In addition to the amount of rainfall, cool temperatures from bud break through leaf emergence can affect their severity. Sycamore trees seem reticent to leaf out this spring due to Sycamore Anthracnose.

In addition, Maple Anthracnose is beginning to show up in multiple locations. The symptoms will likely get worse over the summer as spring-infected leaves turn brown.

Foliage diseases are associated with wet springs which enable spores to infect developing shoots and leaves. Sycamore Anthracnose is common this spring (left) and maple anthracnose is starting to appear (right). Photos: B. Schultz

But Spring has Been Showy

Budbreak at our long-time monitoring site at Proctor Maple Research Center in Underhill was on May 2. This is 2 days earlier than the long term average, and 5 days earlier than last year. After budbreak, things slowed down. Full leaf out at PMRC was May 23. This is similar to the long-term average, but is the latest we've seen full leaf out since 2003.

The heavily-flowering trees afford great opportunities for pollinators, provided they get a chance to visit blossoms between rain events. Various apples (left) are attractive to many species of bees, such as the Andrena bee featured here (center). Pin cherries, dandelions and many other flowers are being visited by a variety of pollinators. These blueberry blossoms are receiving attention from a bee in the family Halictidae, genus Lasioglossum. Photos: M. Wesley (left), L. Richardson (center and right)

Described as "the most blossomlicious spring ever," this season has provided opportunities to get some good flower-sniffing in. Do apple and cherry trees seem to be flowering more prolifically than usual? The recent prolonged cool temperatures may have enabled individual trees to bloom "fully" rather than little-by-little, retaining a full complement of blossoms and making them appear more heavy with flowers at a given time. Trees are looking nice longer!

Lots of rain this spring may have helped promote this beautiful show too but, for many trees, the propensity to produce flowers was determined last season. Leonard Perry, UVM Horticulture Professor Emeritus, commented that a combination of factors, rain included, likely brought this on. The relatively mild winter temperature-wise helped too. Also, after a bit of an off-year last spring, there are more trees blooming heavily on this alternate year.

Red, silver and sugar maple seed is heavy in some regions of the state, along with birch. Lilac bloom appears to be about a week later than usual.

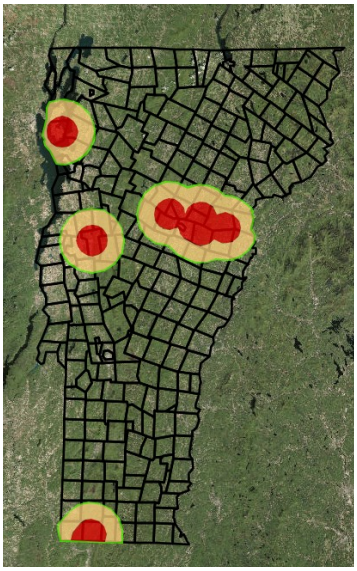
Emerald Ash Borer Infestation Discoveries Continue

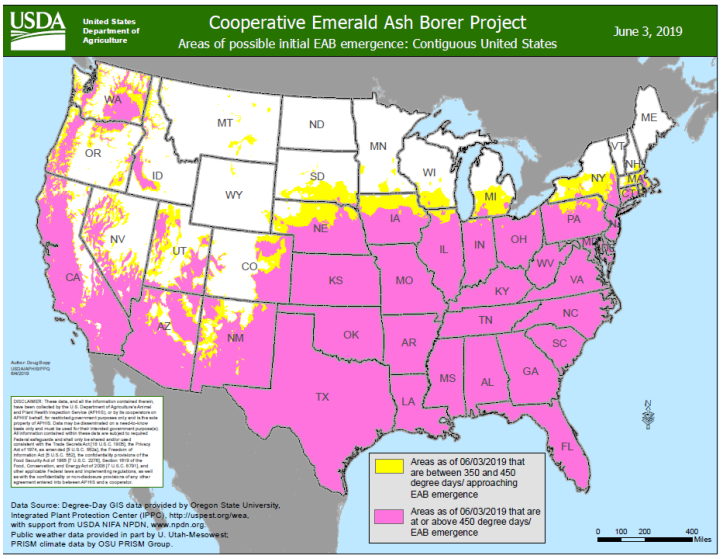
On June 4th, the presence of Emerald Ash Borer (EAB) was confirmed in Bristol, VT, which is the first confirmed sighting in Addison County. The suspected infestation, on a street tree, was reported by a consulting forester.

The flight season of EAB began on June 1st and continues until September 30th. This is the time that EAB are emerging from host ash trees and infested and untreated ash wood products, such as ash firewood. See Vermont's "Slow the Spread" recommendations for information on additional precautions to reduce risk of moving EAB at this time of year.

Emerald Ash Borer (EAB) Awareness Week ran from May 18—25. A number of links which provide tools and resources to educate people in your communities can be found at vtinvasives.org.

Detections continue elsewhere in the region. Closest to Vermont, EAB has been detected in the town of Croydon in New Hampshire's Sullivan County. The location is just over ten miles from the Vermont border.





The vtinvasives map on the left shows the Emerald Ash Borer (EAB) Infested Area, including the newest find in Bristol in Addison County (photo: T. Hanson). The green-ringed locations show the area to which the Slow the Spread Recommendations refer. The USDA map on the right shows the current EAB growing degree days (GDD) to initial beetle emergence.

Forest Tent Caterpillar Update

There were no pesticide applications requested this spring for control of forest tent caterpillar (FTC). So far, we have not received any reports of FTC defoliation. We don't know for sure whether this is due to a decline in FTC numbers, although last summer's moth catch and the winter egg mass surveys suggest this is the case. The late spring may also be delaying the onset of defoliation We will know more by the end of June.

Maple Leaf Cutter Adults in Flight

The tiny maple leaf cutter (MLC) moths, with their metallic wings and orange "punk haircuts" are in flight now. You may recall that late-season defoliation by these insects was very noticeable in many parts of the state at the end of the 2018 growing season. If the numerous adults are an indication of what's to come this year, we may see once again see widespread MLC damage affecting maples.

Maple leaf cutter moths are in flight now. First signs of maple leafcutter feeding are small mines which appear in June. Photo above: C. Lehman

As summer progresses, look for oval-shaped holes of various sizes and defoliated rings with green centers. You will also see oval-shaped disks cut from leaves and used as larval cases on the upper leaf surface. Leaves brown prematurely. Photo below: D. Dillner

Springtime Specials

An exciting spring sight in a Middlebury frog pond was the emergence of a dragonfly known as the Unicorn Clubtail, *Arigomphus villosipes.* Semi-permanent and artificial ponds, lakes and slow-areas of small streams with muddy bottoms are preferred habitats of this species. This record moves the early flight date for Unicorn Clubtails from June 8th to May 29.

According to Michael Blust, Professor Emeritus at Green Mountain College and odonate specialist who identified the dragonfly, these emergence photos are valuable for providing information on the start of the flight season for a species. Photo: M. Wesley

This **ant mimic**, a longhorned beetle (*Cyrtophorus verrucosus*) in disguise, was observed at Kingsland Bay State Park. The beetle feeds on dead hardwoods, including oak, hickory and many others, and also pine. Adults can be found on spring flowers. This species has a couple of color forms. One mimics a reddish-colored ant and the other a black ant.

The family Cerambycidae, to which this beetle belongs, is one of the larger insect families, with over 1,100 species in North America alone. Larvae of almost all longhorned beetles feed on plant tissue, the majority in decaying wood. Photo: L. Lund

Millipedes, commonly known as thousand-legged "worms", feed on both living and decomposing plant material and occasionally on dead insects. They have high moisture requirements and may be common in damp wooded areas. Millipedes may be found hiding under stones, boards, logs and leaves. They feed at night.

Females of this millipede, a member of the Narceus americanus/annularis complex, emerge in spring to mate and lay eggs. Females lay eggs in a cup formed from regurgitated food. This specimen was observed in Hyde Park. Photo. E. Meacham

It appears to be a good year for Pheasant Back mushrooms, *Polyporus squamosus*. Also known as Dryad's Saddle, this fungus is common on elm.

Polyporus squamosus is sometimes encountered when people are out looking for morels.
Photos: Curtis E. Young, The Ohio State University, Bugwood.org

Double Tree Revisited

In 2015, we reported on an odd-looking tree that was observed in Williston. Though the rightmost tree appeared to be two trees growing side by side, the photographer did some investigative work and found that the two types of foliage were actually growing on a single stem. This was a spruce cultivar that had reverted to a wild type. Dwarf ornamentals like these are often mutants of much larger trees. Occasionally, especially in older trees, new growth on branches will change in appearance, and the needles will appear much longer and grow much faster. These sections are called "revertants" meaning that on the DNA level, cells lost the dwarf mutation and reverted to the "original" or "wild type" form of the plants. Four years later, the revertant has continued to grow. To read more about this phenomenon, see page 65 of Michael Snyder's new book https://www.bondcliffbooks.com/proddetail.php?prod=978-1-931271-36-3

Spruce cultivar in 2015 that has reverted to the original or wild type form. In 2019, the tree has grown and the reverting growth is quite impressive. Photo: J. Ouellette (left) E. Spinney (right)

Another Mystery

This a white birch in Shaftsbury, where the 1998 tornado went through (hence the thin surrounding woods.) Perhaps the tree got caught in the twister; whatever happened, it didn't want to give up!

A wrestling match with high winds left this tree damaged but still standing. Thanks to Bill Guenther, retired Windham County Forester, for sharing this photo with us.

Federal Noxious Weed List Spotlight: Goatsrue, *Galega officinalis*

Vermont's Noxious Weed Quarantine includes species listed as Class A (not native to Vermont, not known to occur in Vermont, and pose a serious threat), Class B (not native to Vermont, known to occur in Vermont and pose a serious threat), as well as those listed on the Federal Noxious Weed List. While many of these species on the Federal Noxious Weed List likely won't occur in Vermont, there are a few that have the potential. The objective of this series of articles is to draw attention to lesser known invasive species from the Federal Noxious Weed List, that can be found in the Northeast, and are, in fact, part of Vermont's Noxious Weed Quarantine.

This month's focal quarantine species is Goatsrue (*Galega officinalis*), also known as professor-weed and goat's rue. It is a member of the legume/bean family (Fabaceae), and is native to Central Europe into Western Asia. The species was first introduced in the United States in the late 1800's at Utah State University for research as a potential forage crop. It produces an alkaloid chemical that is toxic, which is one of the primary reasons the original research was abandoned (as was the research patch of Goatsrue). In the time since the study was abandoned, the plant has spread to 10 states and 1 Canadian Province. This plant can form dense monoculture thickets, invading streambanks, pastures, and disturbed areas. It is because of this invasive behavior that the United States added Goatsrue to the Federal Noxious Weed list in 1983. Despite the prohibited status, the current primary means of spread include the selling or sharing of this plant as an ornamental, or the seeds ending up in "wildflower mixes".

Goatsrue flower, with pink-purple-white pea-like flowers (left); Goatsrue infestation (right). Photos: USDA APHIS PPQ-Oxford, North Carolina, USDA APHIS PPQ, Bugwood.org (left);Randy Westbrooks, Invasive Plant Control, Inc., Bugwood.org (right)

Goatsrue is a moderate sized herbaceous perennial plant, up to 6’ tall, with multiple stems. The stems are hollow and cylindrical. The leaves are arranged alternately, and pinnately compound.

When looking at the leaves and the flowers, it would be easy to confuse this plant with look-a-like species: wild goat’s-rue, *Tephrosia virginiana* (goatsrue native to New England); blue wild indigo, *Baptisia australis* (native to southeastern United States), or multiple species of vetch. Invasive goatsrue flowers are not distinctly bi- or tri-colored. The plant also grows much larger and denser than the other similar looking species, and the compound leaves have a terminal leaflet with a “hair-like” appendage.

Seed pods of Goatsrue are 1-2” in length and contain up to 9 seeds each. Each plant can produce 15,000+ pods. USDA APHIS PPQ , USDA APHIS PPQ, Bugwood.org

To learn more about Goatsrue, check out these resources:

GoBotany – Native Plant Trust; eXtension – Cooperative Extension System; Massachusetts Introduced Pests Outreach Program; CAB International; Invasive Plant Atlas of the United States; and California Invasive Plant Council.

For more information, contact the Forest Biology Laboratory at 802-565-1585 or:	Windsor & Windham Counties..... Bennington & Rutland Counties..... Addison, Chittenden, Franklin & Grand Isle Counties..... Lamoille, Orange & Washington Counties..... Caledonia, Orleans & Essex Counties.....	Springfield (802) 289-0613 Rutland (802) 786-0060 Essex Junction (802) 879-6565 Barre (802) 476-0170 St. Johnsbury (802) 751-0110

Forest health programs in the Vermont Department of Forests, Parks, and Recreation are supported, in part, by the US Forest Service, State and Private Forestry, and conducted in partnership with the Vermont Agency of Agriculture, Food, and Markets, USDA-APHIS, the University of Vermont, cooperating landowners, resource managers, and citizen volunteers. In accordance with Federal law and U.S. Department of Agriculture policy, this institution is prohibited from discrimination on the basis of race, color, national origin, sex, age, or disability.