



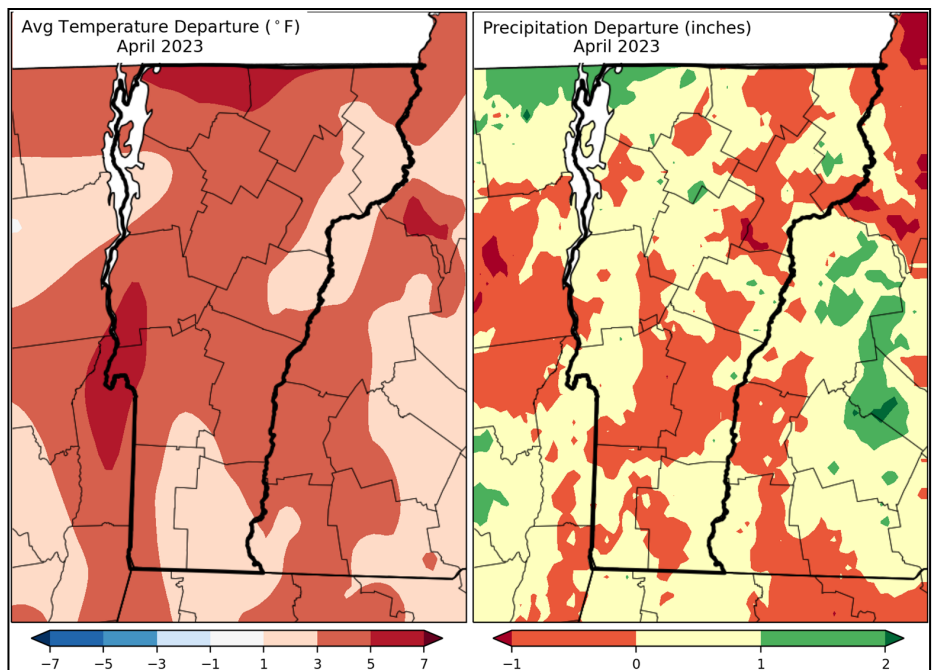
Vermont Forest Health

Insect and Disease Observations – April 2023

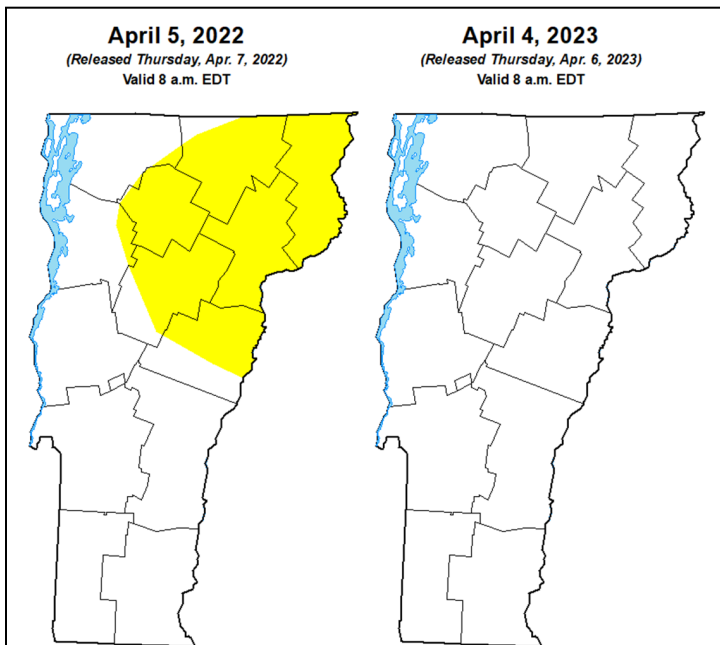
Department of Forests, Parks & Recreation
April 2023 vtforest.com

Weather

April marks the first full month of spring, with warmer weather around the corner. On average, this month was warmer and slightly dryer than last April. State-wide temperatures averaged 45°F, which was 3.8 degrees warmer than April of last year. Statewide precipitation averaged 4.03 inches, which was 0.89 inches less than April of last year.



Average temperature and precipitation departure from normal. Maps and data: [Northeast Regional Climate Center](http://www.norc.cmu.edu).



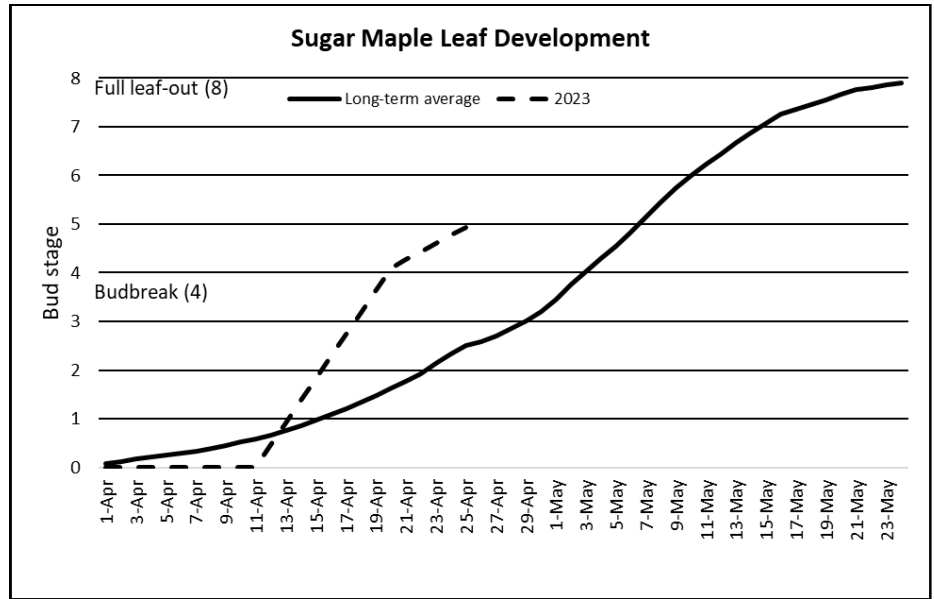
Drought Update

According to the U.S Drought Monitor, spring rainfall kept 100% of the state out of drought conditions throughout the month. Compared to this time last year on April 5, 2022, 36.09% of the state was listed as abnormally dry and 63.91% was listed as no drought. By the end of April 2022, drought conditions reduced to 12.58% listed as abnormally dry and 87.42% of the state listed as no drought.

Drought Comparison between April 2022 and 2023. Map and data: [U.S. Drought Monitor](http://www.drought.gov).

Spring Budbreak and Leaf Out

Sugar maple trees at our long-term phenology monitoring site at Proctor Maple Research Center (Underhill, VT) broke bud on April 20, 2023. This is notably earlier than 2022, but slightly later than our earliest budbreak on record, which occurred on April 12, 2021. Buds were largely dormant until an unusually warm week of weather in mid-April which accelerated development. Most trees experienced heavy flowering, and we expect this to lead to a heavy seed year for sugar maples.



Wildland Fire Update

Most Vermont wildland fires occur between the end of March and the beginning of June, although wildland fire season extends into fall. Spring is the time of year that most involves changing weather patterns. Low relative humidity and gusty winds, combined with dry fuel conditions and tough terrain, can make controlling wildland fires difficult and hazardous. Fortunately, spring fires seldom burn deeply into the ground litter, which makes clean up easier and less expensive. For more information on wildland fires in Vermont and to sign up to receive fire danger emails, visit [Vermont's Wildland Fire Seasons](#).



Aftermath of a forest fire in a West Rutland swamp. This fire occurred on April 9, 2023, and burned a total of two acres.

Aftermath of a forest fire that started by a tree falling on a powerline in Rupert, VT. This fire occurred on April 11, 2023, and burned a total of six acres.



Supplemental Sightings

Small cabbage white (*Pieris rapae*) was observed in a sugar shack in Washington County in early April. These butterflies are non-native and were introduced to North America from Europe in 1860. Small cabbage whites feed on plants in the mustard (Brassicaceae) family and caper (Capparidaceae) family, and their habitat ranges from wood edges, gardens, roadsides to urban suburbs. Although they are usually more abundant later in the growing season, these butterflies are one of the first to emerge in the spring, and will persist until the first hard frost in the fall.



Small cabbage white. Photo credit: M. L. Brust, [BugGuide](#).



Ramps (*Allium tricoccum*) have emerged in most areas of the state. This plant emerges from a bulb, with only one to two leaves that emerge separately. Ramps grow in moist and shaded conditions, and their leaves and bulbs smell like onions when crushed. Ramps have a 5-7 year growth cycle, so only harvesting one leaf/bulb per plant is recommended.

Ramps. Photo credit: Southern Research Station, USDA Forest Service, [Bugwood](#).

Red velvet mites (*Allothrombium* sp.) were observed in leaf litter in Orange County. These arthropods are common in spring, and are most noticeable after periods of heavy rain. As larvae, red velvet mites attach themselves to a variety of live eggs, larvae and adult insects and feed parasitically. As adults, they become predatory, killing and devouring insects in the soil.



Red velvet mite. Photo credit: FPR Staff.



Woolly bear caterpillar (*Pyrrharctia isabella*), was observed in Washington County. This native caterpillar emerges from its winter quiescence (dormancy) in leaf cover in spring, and upon emerging, will spin a cocoon where it will emerge in May as an adult Isabella tiger moth. As caterpillars, they will curl into balls when startled, relying on their stiff hairs to protect them from predators.

Woolly bear caterpillar. Photo credit: J.R. Baker, NC State University.

Blacklegged (deer) ticks (*Ixodes scapularis*) have started to be reported across the state. Ticks are commonly found in wooded and grassy habitats, however, they can also be prevalent in urban areas. This tick is responsible for transmitting disease such as Lyme disease, babesiosis and anaplasmosis. For more information about ticks in Vermont, including preventative measures, check out the [VT Department of Health](#) and the [VT Agency of Agriculture, Food & Markets](#) websites.

A: Adult blacklegged ticks. Photo credit: University of Rhode Island. **B:** Several blacklegged ticks crawling up pant leg. Photo credit: FPR Staff.



Eastern tent caterpillar (ETC, *Malacosoma americanum*) larvae were observed feeding on emerging apple (*Malus* spp.) leaves in Rutland County. This native defoliator prefers to feed on cherry (*Prunus* spp.) and apple although it can also be observed on other hardwoods. During early morning and early evening, ETC will emerge from silken nests to feed and retreat into the tent during the day and night to avoid predators and severe weather.

ETC larvae and nest. Photo credit: FPR Staff.

Emerald ash borer (EAB, *Agrilus planipennis*) was detected for the first time in the towns of Putney and Halifax this month. These new towns did not expand the infestation severity into neighboring towns, but increased infestation severity of already affected towns. For additional resources including managing ash, or Use Value Appraisal guidance, and to report a sighting, check out the resources available at [VTInvasives](#).



EAB galleries. Photo credit: FPR Staff.



Apple buds were reported maturing to the "[late pink stage](#)" in the Northeast Kingdom in mid-April, a week earlier than historic observations. Prematurely blooming flowers are susceptible to late spring frost, which can drastically reduce the size of the fruit crop. For flowers at or near the bloom stage (when they have the least cold tolerance) freezing temperatures of 28°F can result in 10% loss whereas freezing temperatures of 24°F can result in a 90% loss.

Apple flower killed by freezing temperatures. Photo credit and data: Mark Longstroth, MSU Extension.

Foraging For Fungi

True Morels (*Morchella esculenta*), are a highly sought-after edible that have been reported in the mid-April. This fungus can be both mycorrhizal and saprotrophic and is found in mixed hardwood stands. Its cap is yellow-brown in color and has a globular or elongated vertical oval shape that is covered in pits and ridges. The cap is 5-12cm tall and 3-8cm wide and is attached directly to the stem. It has a creamy white spore print. The stem is whiteish in color and is 3-12cm long and 1.5-6cm wide. When the fruiting body is sliced in half, it is completely hollow. This mushroom has several look-alikes, including the false morel (*Gyromitra esculenta*). This species, although consumed in some cultures, can be fatal due to the carcinogenic mycotoxin, gyromitrin. This mushroom is also both mycorrhizal and saprotrophic and is found in soft-wood stands. Its cap is tan to reddish-brown in color, brain-shaped, and measures 4-8cm tall and 3-12cm wide. It has a yellow spore print. Its stem is pale yellow to tan and is 3-9cm long and 1-3.5cm wide. When sliced in half this mushroom has a cauliflower-like internal structure.



A: False morel. **B:** True morel. Photo credit: Davide Cassi, University of Parma.



Various sizes of pheasant back mushrooms. Photo credit: Richard Nadon, [Mushroom Expert](#).

Pheasant back mushrooms (*Polyporus squamosus*) have been reported in southern Vermont at the end of this month. This polypore is both saprotrophic and parasitic and is most often found in association with American elm (*Ulmus americana*) but can also be found growing out of other hardwood stumps and logs. This mushroom is an annual polypore and is thick and soft when young, hardening to a cork-like texture as it matures. Its cap is pale tan to creamy yellowish with brown to blackish scales, and measures 4-30cm across and 1-4cm thick. The underside of the cap has creamy-white to yellow pores that produce a white spore print. Its stem varies in color from creamy white on the bottom and dark brown on the top and is 2-9cm long and 1-4cm thick. These mushrooms are edible when young,

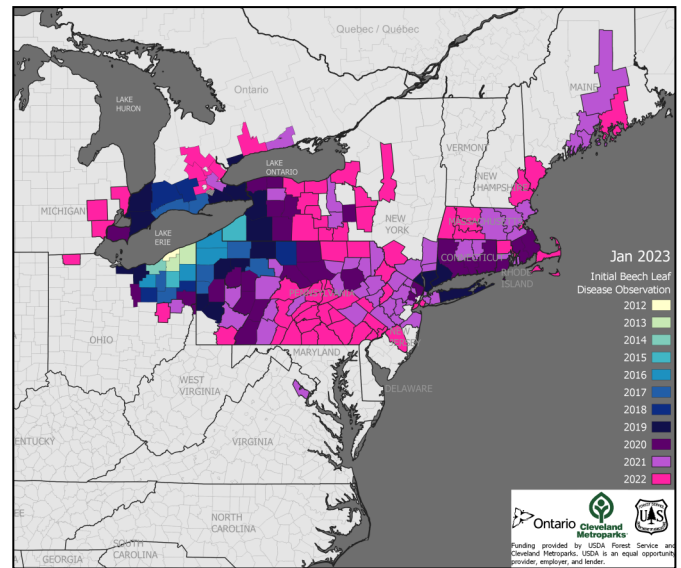
typically when the cap is less than 6cm across. These mushrooms have no common look-alikes.

As with all wild mushrooms, there are risks to eating and misidentifying them which can be both dangerous and fatal. Always ensure you have the correct identification before consuming any wild edible. **The State of Vermont accepts no liability or responsibility for the consumption and/or misidentification of any mushrooms mentioned in this publication.**

Pests in the Spotlight: Beech Leaf Disease

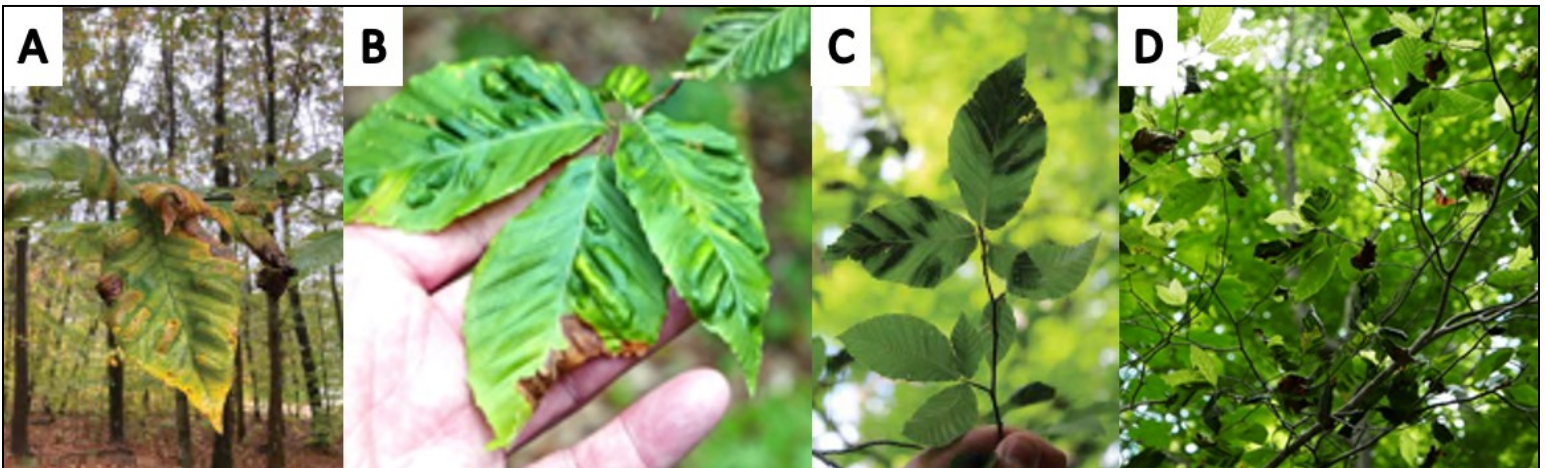
Beech leaf disease (BLD) affects American (*Fagus grandifolia*), European (*F. sylvatica*), Oriental (*F. orientalis*), and Chinese (*F. engleriana*) beech species, and causes leaf deformation, dieback, and mortality of infested hosts. The causal agent of BLD is an introduced nematode from Japan, *Litylenchus crenatae mccannii*. This pest was first documented in Ohio in 2012 and has currently **not been observed in Vermont**. This pest can affect all ages and sizes of beech, and is found in association with buds and leaves.

This pest has currently been reported in 12 states, and Ontario, Canada. The most recent reports are in New Hampshire (2022), Maine (2021), Massachusetts (2020) and Rhode Island (2020).



Current known range of BLD. Map and data: Cleveland Metroparks.

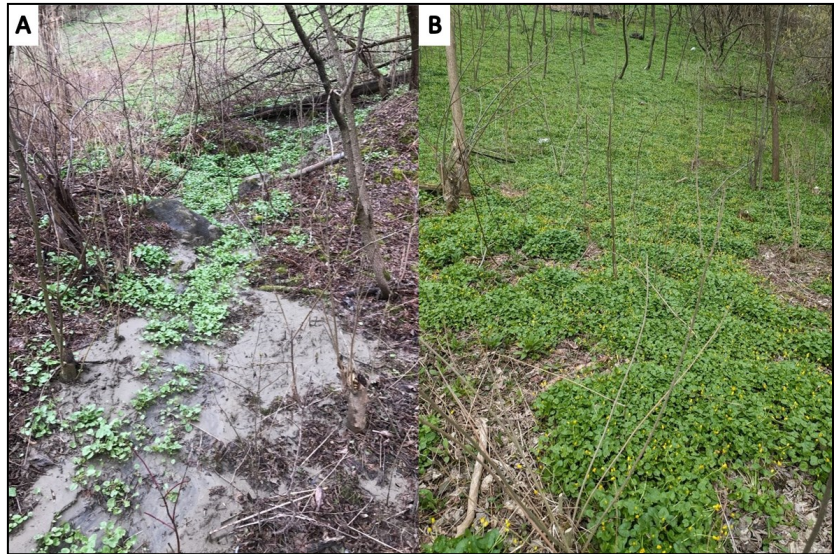
In early stages of infection, beech leaves begin to develop a thick striping pattern between leaf veins, which can sometimes coincide with chlorosis (yellowing). In severe infections, the striping area has been observed as slightly raised and thicker than normal tissue, which will lead to leaf deformation. Heavily symptomatic leaves may drop mid-growing season, however less symptomatic leaves typically do not drop. Over time, dieback will occur which starts at the lower branches on a canopy and progresses upwards. In younger trees, disease progression can be rapid which leads to high mortality of saplings and understory beech. Studies have shown that symptoms do not progress throughout the growing season, which provides support for nematodes overwintering inside of buds and affecting leaves before budbreak in the spring. Due to this, symptoms can include aborted buds which present as crispy empty buds on an affected branch. For more information or to report a sighting, visit [VTinvasives](https://www.vtinvasives.com).



A: Advanced symptoms of BLD. Photo credit: Cameron McIntire, USDA FS. **B:** Moderate symptoms of BLD. Photo credit: Jim Chatfield, Ohio State University. **C:** Banding symptom associated with BLD. Photo credit: Tom Macy, Ohio DNR. **D:** Leaf drop and dieback. Photo credit: Jim Chatfield, Ohio State University.

Early Detection Species: Lesser Celandine

Lesser celandine (*Ficaria verna*) is an invasive plant that is newer on the northern New England scene and that is gaining regional attention. Also known as “fig buttercup” or “fig-crowfoot,” this plant was introduced to North America from Europe as an ornamental planting. An herbarium sample from the 1860s in Pennsylvania indicates its first recorded escape from the garden. The popularity of this perennial plant as an ornamental perhaps comes from the showy yellow flowers that bloom in March and April as harbingers of spring; the English poet William Wordsworth even demonstrates a fondness for lesser celandine in several poems. This goodwill may be fading, as an online search for “*Ficaria verna*/lesser celandine northeast” turned up autocomplete suggestions such as “is *Ficaria verna* invasive?,” “How do I get rid of *Ficaria verna*?,” “should I get rid of lesser celandine?,” and “lesser celandine control.”



Untreated population of lesser celandine on a hillside in Burlington, VT **(A)** April 21st, 2017 and **(B)** April 20th, 2023. Photo credit: FPR staff.

Lesser celandine is present in 27 states and several Canadian provinces. While still available as an ornamental plant in some places, Lesser celandine has only recently been recorded as a garden escape in Vermont (2014). There are known and confirmed expanding populations in the Burlington and Montpelier areas; iNaturalist reports indicate potential populations around Woodstock and Brattleboro; and there are likely many more throughout the state. In the northeast, states like Vermont, New Hampshire, and New York are trying to gather more data on location and extent, and Maine recently added lesser celandine to their “Do Not Sell” plant list. Though this species is not on the Vermont Noxious Weed List, nor the unofficial Watchlist, its invasive tendencies and prohibition in other states are concerning for the health of sensitive natural communities in Vermont. Lesser celandine can be found in floodplain forests, along rivers and lakes, and in disturbed habitat. This plant moves primarily due to its underground growth being spread accidentally by erosion, digging in the area by humans or wildlife, flooding events, or on purpose through cultivation. This plant is a particular threat to Vermont’s rare natural community of floodplain forests. Once established, lesser celandine creates dense mats, excluding all other vegetation.



The roots of lesser celandine are tuberous and easily separate, aiding in the spread of this plant. Photo credit: FPR staff.

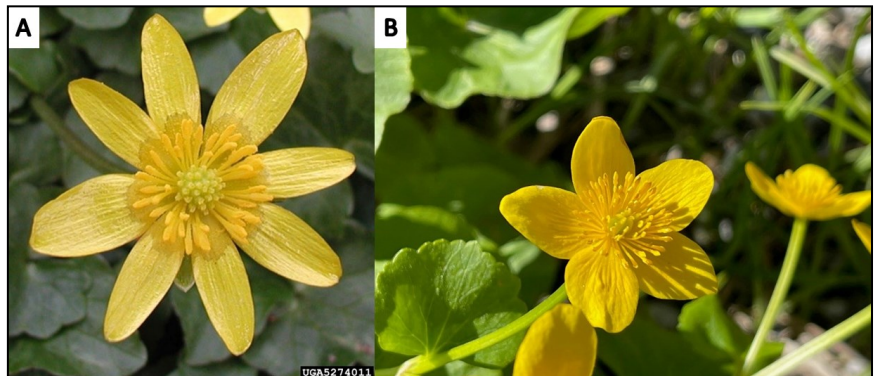
Its tendency to grow and flower in the early spring puts native spring ephemeral wildflowers up against a tough competitor for space and resources.

Control is difficult and intensive, and the best approach is prevention. The plant's habit of dying back after flowering makes the window for control extremely short each season. Mechanical control is highly disruptive to the site, as all reproductive material needs to be removed and disposed of, including the petite underground tubers and rhizomes. Chemical control can only occur once the leaves emerge in early spring but before flowers appear, which can be on the order of weeks or days. Many populations tend to be near water, which means mechanical or chemical treatments could impact water quality and aquatic life (erosion/runoff).

Though the common name might suggest it, lesser celandine (buttercup family: Ranunculaceae) is not related to greater celandine (*Chelidonium majus*; poppy family: Papaveraceae). The most common look-alike for lesser celandine, marsh-marigold (*Caltha palustris*), is a locally evolved plant in Vermont. They both host basal leaves that are dark green, heart to kidney shaped, and up to 4" across, are early spring bloomers, and can be found in moist soils. There are, though, a few key characteristics to look for to distinguish the two:

Flowers

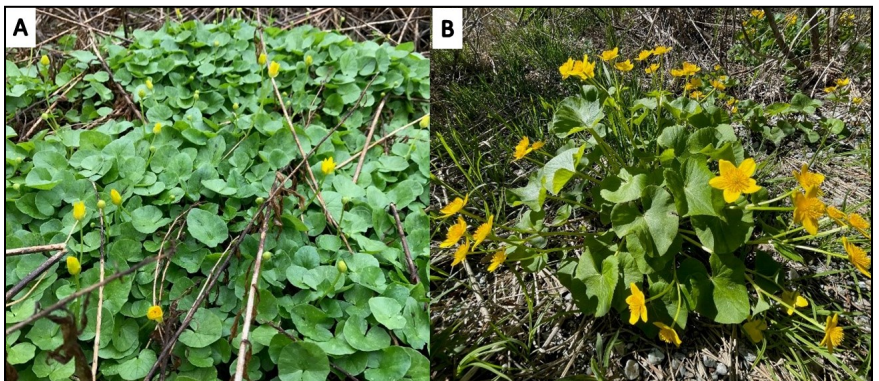
- Lesser celandine flowers are yellow, have 7-11 petals born on grooved stalks that stick up above the leaves and appear in early to mid-April in Vermont.
- Marsh-marigold flowers are yellow, have 5 petal-like sepals, and appear in late April to early May in Vermont.



A: Lesser celandine flowers which have 7-11 petals. Photo credit: (L) Leslie J. Mehrhoff, University of Connecticut, [Bugwood](#). **B:** Marsh-marigold flowers with 5 petaloid sepals. Photo credit: FPR Staff.

Height

- Clusters of Lesser Celandine reach heights of 3-4" tall, and the flower stems can reach 8-9" tall.
- Clusters of Marsh-marigold reach heights of 8-24" tall, with the flower stems only slight taller than the foliage.



A: Low lying cluster of flowering lesser celandine. **B:** Taller cluster of flowering marsh-marigold. Photo credits: FPR staff.

If you find lesser celandine growing outside of an ornamental planting in Vermont, please report it to [VTinvasives](https://www.invasives.org/).

To learn more about lesser celandine, check out these additional resources:

- https://nyis.info/invasive_species/lesser-celandine/
- <https://www.invasive.org/alien/pubs/midatlantic/five.htm>
- <http://www.tsusinvasives.org/home/database/ranunculus-ficaria>
- <https://gobotany.nativeplanttrust.org/species/ficaria/verna/>
- <https://www.invasivespeciesinfo.gov/profile/fig-buttercup>

Invasive Plant Phenology

In the second full week of each month, volunteers around the state observe and report invasive plant [phenophases](#). Their observations are compiled here, creating both a timely resource for best management options and a historic record of plant behavior.

This project aspires to include observations from every county, so observers are still needed in multiple places. If you would like to be involved in this effort please contact pauline.swislocki@vermont.gov or check [our volunteer page](#) for other opportunities to get involved. For more information about the phenology of invasive plants in Vermont, check out [Bud Buds](#), a podcast from the Invasive Plant Program.

Addison – [common barberry](#): leaves; [common reed](#): initial growth; [Japanese barberry](#): leaves; [knotweed](#): initial growth; [lesser celandine](#): leaves; [multiflora rose](#): leaves; [purple loosestrife](#): initial growth; [shrub honeysuckle](#): leaves, flowers or flower buds; [wild parsnip](#): leaves.

Caledonia – [goutweed](#): initial growth; [Japanese barberry](#): leaves; [shrub honeysuckle](#): leaves; [wild chervil](#): leaves.

Chittenden – [Asiatic bittersweet](#): leaves; [common barberry](#): leaves; [common buckthorn](#): leaves; [garlic mustard](#): initial growth, leaves; [goutweed](#): initial growth, leaves; [greater celandine](#): initial growth; leaves; [Japanese barberry](#): leaves; [Japanese knotweed](#): initial growth; [multiflora rose](#): leaves; [shrub honeysuckle](#): leaves; [vinca](#): leaves, flowers or flower buds.

Franklin – [burning bush](#): leaves; [common buckthorn](#): leaves; [goutweed](#): initial growth, leaves; [Japanese barberry](#): leaves.

Washington – [goutweed](#): initial growth; [shrub honeysuckle](#): leaves; [wild chervil](#): initial growth, leaves.



For more information, contact the Forest Biology Laboratory at 802-505-8259 or:

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Bennington & Rutland Counties.....
Addison, Chittenden, Franklin & Grand Isle Counties.....
Lamoille, Orange & Washington Counties.....
Caledonia, Orleans & Essex Counties.....

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Essex Junction (802) 879-6565
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