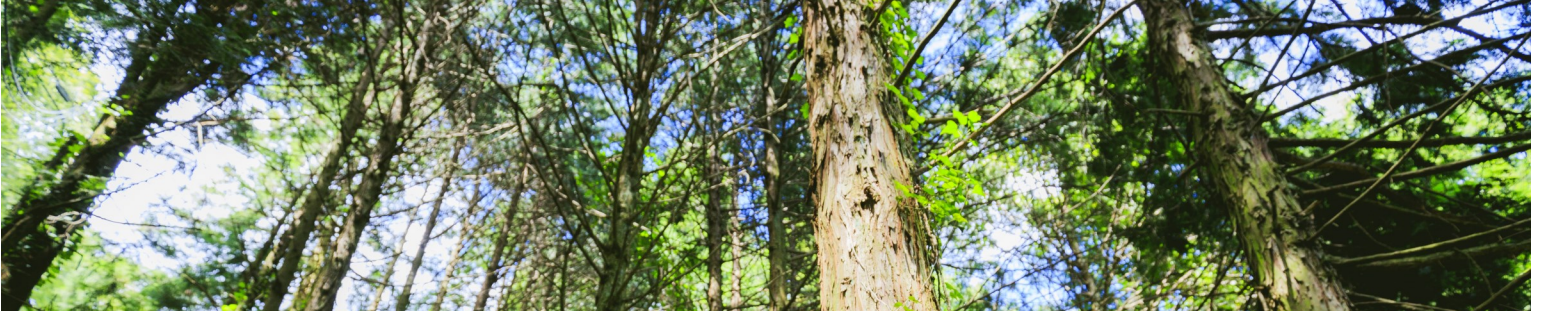


Vermont Forest Health

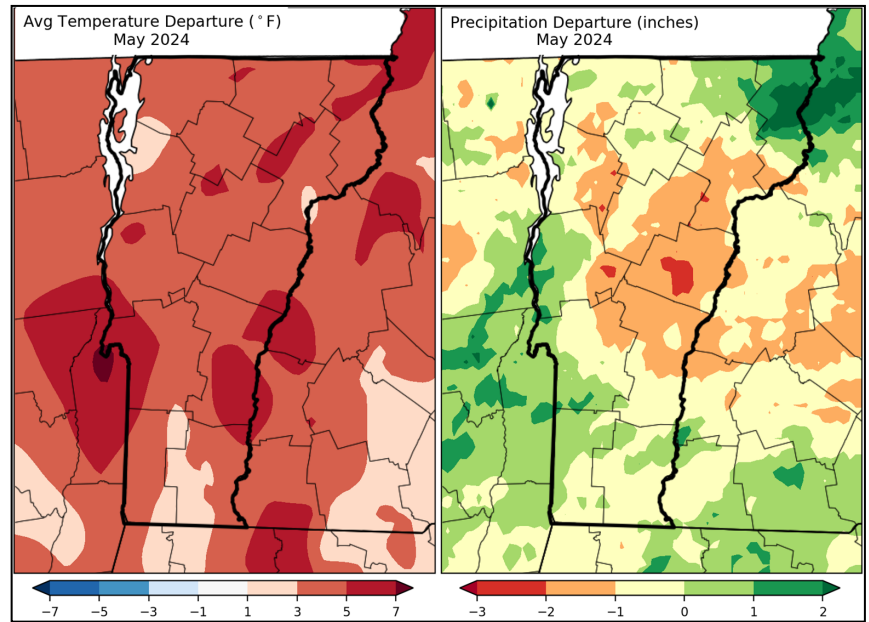
Insect and Disease Observations



May 2024 | Department of Forests, Parks, and Recreation

Weather

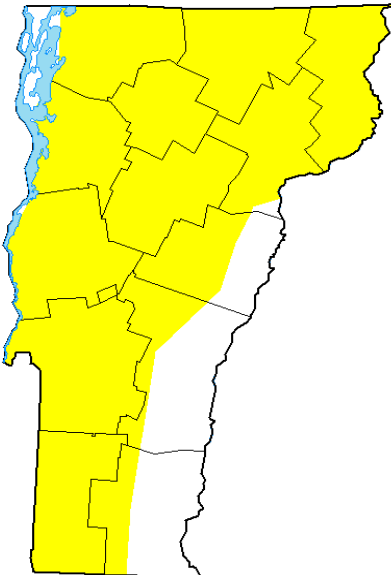
May marks the last full month of spring, although a late month heat wave made many parts of Vermont feel like we were already in summer. On average, this month was much warmer and slightly wetter than last May. Statewide temperatures averaged 57.8°F, which was 6.0 degrees warmer than May of last year. Statewide precipitation averaged 3.34in., which was 0.9in. more than May of last year.



Average temperature and precipitation departure from normal. Map and data: [Northeast Regional Climate Center](#).

May 30, 2023

(Released Thursday, Jun. 1, 2023)
Valid 8 a.m. EDT

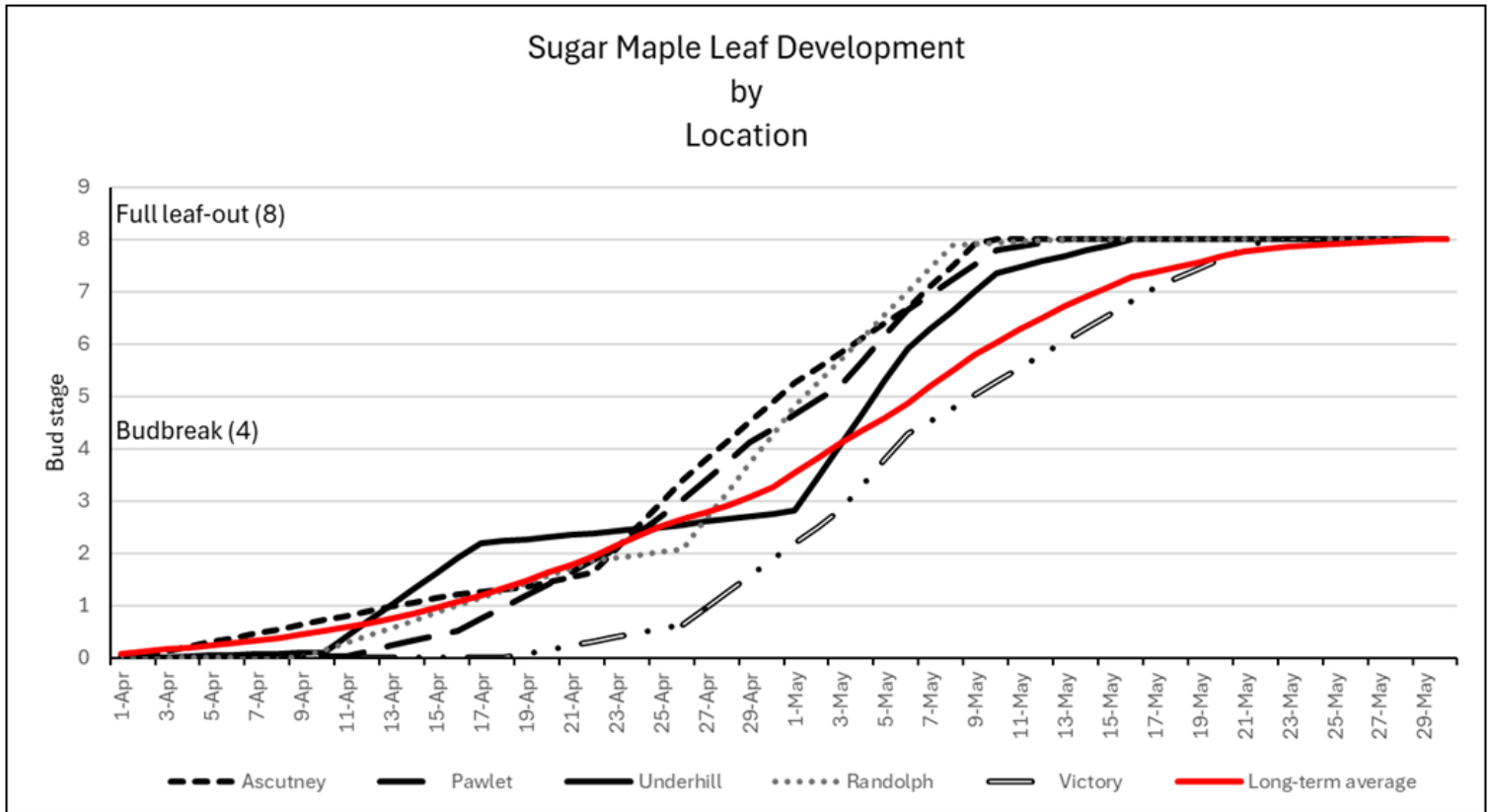


Drought Update

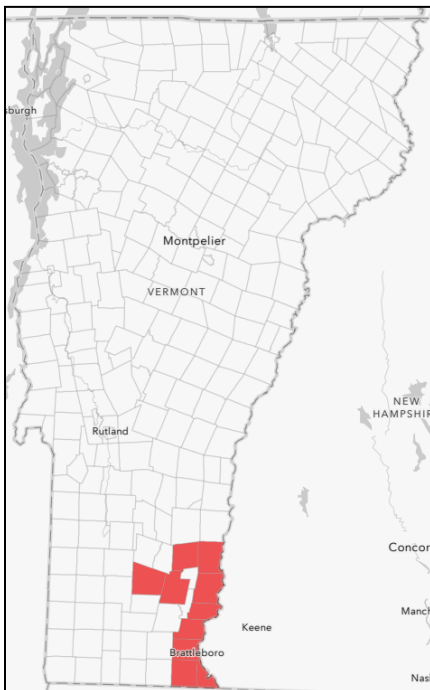
Spring rainfall continued to keep the entire state out of drought conditions this month. On May 28th, the U.S. Drought Monitor listed 100% of the state as no drought. Compared to this time last year on May 30, 2023, 81.89% of the state was listed as abnormally dry with only 18.11% listed as no drought.

Drought conditions from May 30, 2023.
Map and data: [U.S. Drought Monitor](#).

Spring Budbreak and Leaf Out



Sugar maple budbreak at our long term monitoring site in Underhill occurred on May 3rd which matches the long-term average for this location. This year we added four additional Sugar maple bud phenology locations in Weathersfield, Pawlet, Randolph, and Victory. Budbreak occurred at Ascutney and Pawlet locations on April 28th and 29th, respectively, followed by Randolph on April 30th. Budbreak occurred much later in our most northern location at Victory on May 6th. Full leaf-out for our Underhill location occurred on May 16th, which is 14 days earlier than the long-term average at this location.



Beech Leaf Disease Update

Several new beech leaf disease (BLD, causal agent *Litylenchus crenatae mccannii*) detections were found by both FPR delineation surveys and public reporting. The new detections were in Windham County and include the towns of Brattleboro, Grafton, Guilford, Jamaica, Putney, Rockingham, and Westminister. Since this is an invasive pest, FPR Forest Health staff will continue to monitor its spread and impacts across the state. Up-to-date range map of BLD infestation (and other invasive pests) can be found by viewing the [Vermont Forest Invasive Pest Status Map](#). To report a sighting, please visit [Vtinvasives](#).

Vermont BLD range map. Photo and data credit: [FPR Staff](#).

Supplemental Sightings

Eastern tent caterpillar (ETC, *Malacosoma americanum*) larvae were observed emerging on black cherry (*Prunus serotina*) in Rutland County. This native defoliator prefers to feed on cherry and apple (*Malus* spp.) 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.



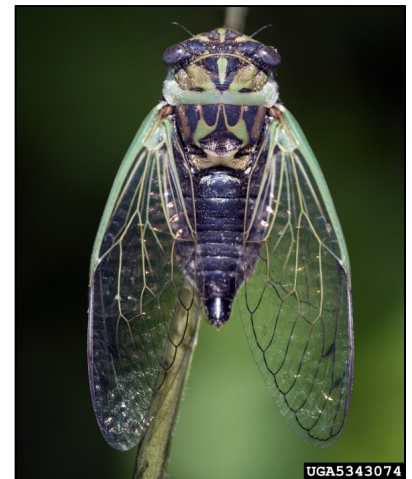
ETC larvae. Photo credit: FPR Staff.



Ash flower gall mite (*Aceria fraxiniflora*) damage was observed on white ash (*Fraxinus americana*) in Orleans County. These mites feed on the male flowers and cause swelling of tissues that cause the flower clusters to become distorted and irregularly branched. Although these mites are not aesthetically pleasing, these galls do not harm the tree and can be pruned out in the spring.

Ash flower galls. Photo credit: Steven Katovich, [Bugwood](#).

Northern dog-day cicadas (*Neotibicen canicularis*) have been reported in Orange County. These annual cicadas typically emerge as adults during the long so called “dog-days” of summer, or more accurately when the soil temperature is consistently above 64°F, after spending 2-5 years in the soil as nymphs. These cicadas are not apart of the double emergence of the 13 and 17-year cicada broods, an event that will not impact Vermont.



Northern dog-day cicada. Photo credit: David Cappaert, [Bugwood](#).



Smooth patch of ash (*Aleurodiscus* sp., *Dendrothele* sp.) continues to be reported across the state. Smooth patch is caused by a fungus that creates irregular smooth and sunken areas that appear on bole and branches of ash trees. This fungus only consumes dead bark tissue and therefore has minimal effect on the overall health of the infected tree.

Smooth patch of ash. Photo credit: Steven Katovich, [Bugwood](#).

Phytophthora bleeding canker (*Phytophthora* spp.) was observed on grey birch (*Betula populifolia*) in Rutland County. This pathogen is an Oomycete, a unicellular protist that thrives in soil and wet conditions. This pathogen affects numerous hardwood trees where it kills the sapwood tissues causing cankers. Cankers ooze a fluid that externally stains the bark reddish-brown, and internally stains the sapwood either blue, pink or brown. Although not the causal agent of mortality, infected trees are predisposed to other fungal pathogen and insect stressors.



Phytophthora bleeding canker. Photo credit: FPR Staff.



Forest tent caterpillar (FTC, *Malacosoma disstria*) larvae was observed on sugar maple (*Acer saccharum*) in Orange County. These native defoliators do not make tents like their name implies, but when not feeding will congregate together on a silken mat that is used for periods of rest and a location to molt. FTC have outbreaks approximately every 6 to 16 years, which then lasts for 3 to 5 years.

FTC larvae. Photo credit: Jon Yuschock, [Bugwood](#).

Beech anthracnose, (causal agent *Discula umbrinella*) was observed in Windham County on American beech (*Fagus grandifolia*) following periods of heavy rainfall. This fungus causes roundish necrotic lesions and necrotic margins. This brown tissue sometimes gets knocked out of the leaf by rainfall leaving holes. Heavily infected leaves may prematurely drop.



Beech anthracnose. Photo credit: Joe Boggs, [OSU Extension](#).



Jumping worms (*Amyntas agrestis*, *A. tokionensis*, and *Metaphire hilgendorfri*) continue to be reported across many parts of the state. These non-native earthworms are glossy, dark gray-brown in color with a whitish clitellum. When handled, they thrash violently. Infestations rapidly break down organic matter, leading to erosion, decreased nutrients, and reduced regeneration in forested stands.

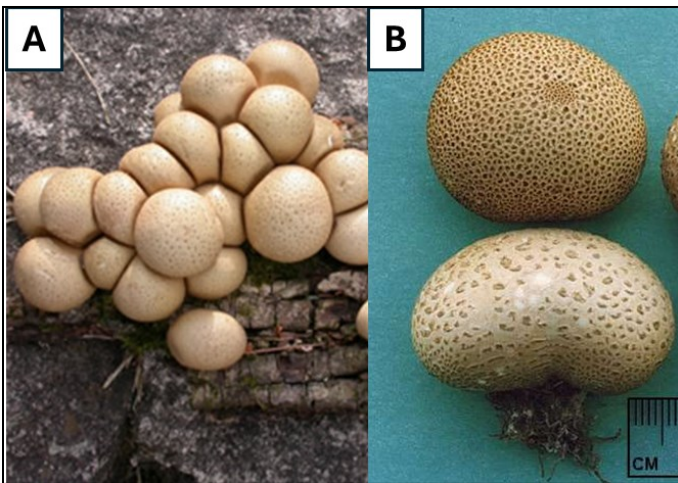
Jumping worm. Photo credit: Wisconsin DNR.

Foraging for Fungi

True Morels (*Morchella esculenta*), are a highly sought-after edible found in late spring. 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, and when 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 softwood 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.



A: Pear-shaped puffballs. Photo credit: Gary Emberger, Messiah University **B:** Common earthballs. Photo credit: Richard Nadon, [Mushroomexpert](http://Mushroomexpert.com).

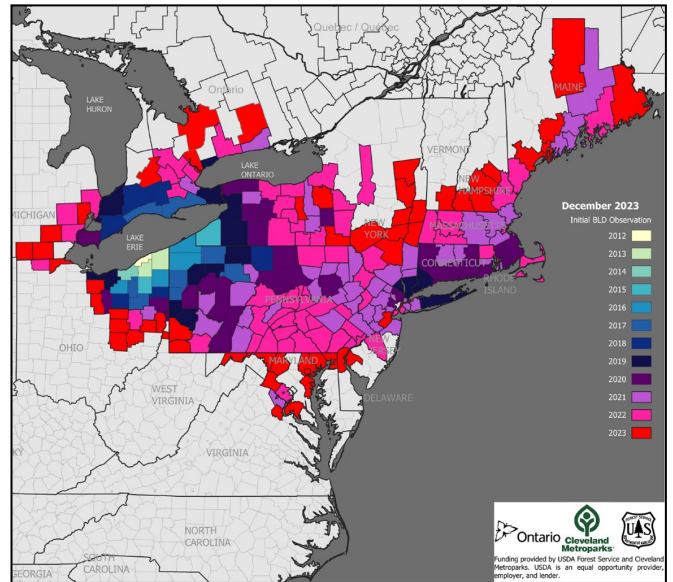
Pear-shaped puffball (*Apioperdon pyriforme*) is an edible saprotrophic fungi that can be found on decaying wood. Fruiting bodies are pale to yellow-brown and are round to pear shaped with fine spines on its immature surface. These puffballs grow in clusters, with individual puffballs measuring up to 4.5cm high and is 2-3.5cm wide. These are only edible when the internal gleba (spore tissue) is completely white, a stage more often observed in July. Due to a decay-resistant outer surface, rancid puffballs can be observed in spring. This mushroom has a poisonous look-alike, common earth balls (*Scleroderma citrinum*). Common earthballs are mycorrhizal with conifers and hardwood trees and grow alone or in clusters. The round fruiting body is yellow-brown, are

2-10cm across and has a hard and scaly surface. This puffball also has a white gleba when immature. *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 these mushrooms.*

Invasive Pest Spotlight: Beech Leaf Disease

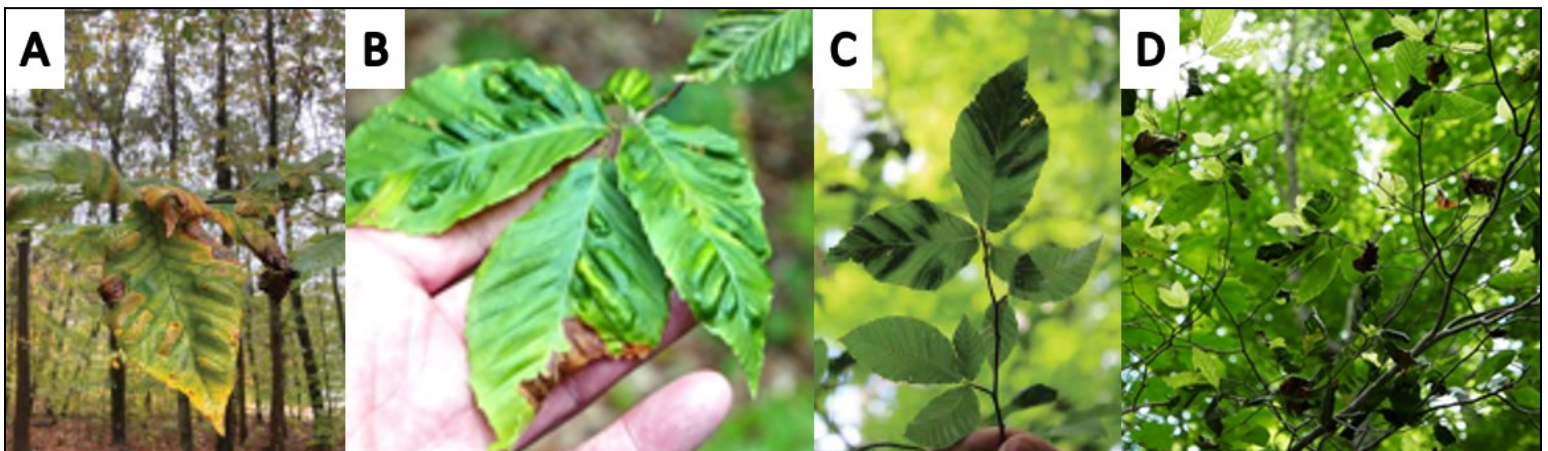
Beech leaf disease (BLD) affects American (*Fagus grandifolia*), European (*F. sylvatica*), Oriental (*F. orientalis*), and Chinese (*F. engleriana*) beech species, and causes leaf deformation, dieback, and mortality of infested hosts. The causal agent of BLD is an introduced nematode from Japan, *Litylenchus crenatae mccannii*. This pest was first documented in Ohio in 2012 and was detected in Vermont in 2023. This pest can affect all ages and sizes of beech, and is found in association with buds and leaves.

The most recent reports are in Vermont (2023) New Hampshire (2022), Maine (2021), Massachusetts (2020) and Rhode Island (2020).



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

Infested leaves begin to develop a thick striping pattern between leaf veins, which can sometimes coincide with chlorosis (yellowing). This 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. 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.

Invasive Plant Spotlight: Wild Chervil

Wild chervil (*Anthriscus sylvestris*) is native to Europe but has been introduced in Vermont as an ornamental, and unfortunately continues to be found in seed mixes. This invasive can reproduce by both seeds and vegetatively, through root buds, allowing for quick establishment where introduced. Wild chervil forms a deep tap root and can resprout from any part of the root. This can lead to wild chervil forming dense mats, outcompeting its native neighbors.



Wild chervil seeds ripening. The seed will start green and turn brown when mature. Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.

Wild chervil is in the carrot family (Apiaceae) and has alternately arranged, compound, almost fern-like leaves. Its leaves are among some of the first greenery in springtime and its fast growth can shade out other species. Its flowers are formed on umbels and are white with 5 notched petals. The flowering stage of wild chervil can be confused with Queen Anne's lace (*Daucus carota*) however, wild chervil flowers earlier in the season (May - June) whereas Queen Anne's lace is later in the summer. Wild chervil is a prolific seed producer and the seeds can stay viable in the soil for a few years. Wild chervil's stem is hollow and covered in hairs, and individual plants can grow between 3-6 feet tall.



Wild Chervil leaf, compound and alternately -arranged. Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.

Once established, treatment options are limited since it is fairly resistant to most chemical options. As for mechanical options, hand-pulling can be challenging due to the deep tap root that wild chervil forms, as well as its ability to reproduce through root buds. If some root remains, or if the pulled plant is left on top of the soil, it can regrow. Due to this, all removed plant parts should be contained in a bag or burned. If management is during the seed producing stage, cut and bag seed heads before attempting to dig or pull the plant. Mowing is not recommended unless it can be done either repeatedly throughout the growing season, or just before flowering.

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 on [VTinvasives](https://www.vermont.gov/info/000001), 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 Kathy.Decker@vermont.gov. Below are some of the various plants and phenological phases observed in 8 different counties. Observations from individuals within counties were combined.

Observations taken week of May 14 – 20, 2024

| County | Garlic mustard (<i>Alliaria petiolata</i>) | Knotweed (<i>Fallopia/Reynoutria spp</i>) | Barberry (<i>Berberis thunbergii</i>) | Bittersweet (<i>Celastrus orbiculatus</i>) | Honeysuckle (<i>Lonicera sp.</i>) | Multiflora Rose (<i>Rosa multiflora</i>) | Goutweed (<i>Aegopodium podagraria</i>) | Wild Chervil (<i>Anthriscus sylvestris</i>) |
|------------|--|--|--|--|--|--|---|--|
| Addison | Flower Buds/Flower Heads, Open Flowers | Initial Growth, Leaves, Increasing Leaf Size | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads | Not Observed | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size | Not Observed | Not Observed |
| Bennington | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads | Not Observed | Not Observed | Not Observed | Not Observed | Not Observed | Not Observed | Not Observed |
| Caledonia | Increasing Leaf Size, Flower Buds/Flower Heads, Open Flowers | Leaves, Increasing Leaf Size | Initial Growth, Breaking leaf buds, Leaves, Increasing leaf size, flower buds | Leaves | Leaves, Increasing Leaf Size | Not Observed | Goutweed leaves and increasing leaf size. | Leaves |
| Chittenden | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads, Open Flowers | Initial Growth | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads, Open Flowers | Leaves | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads, Open Flowers | Initial Growth, Breaking leaf buds, Leaves | Not Observed | Not Observed |
| Essex | Not Observed | Breaking leaf buds, Leaves, Increasing Leaf Size | Not Observed | Not Observed | Leaves, Flower Buds/Flower Heads | Not Observed | Not Observed | Not Observed |
| Orange | Open Flowers | Leaves, Increasing Leaf Size | Open Flowers | Breaking leaf buds, Leaves, Increasing Leaf Size | Leaves, Increasing Leaf Size, Flower Buds/Flower Heads | Leaves, Increasing Leaf Size | Not Observed | Wild Chervil-leaves, flower buds, open flowers |
| Orleans | Not Observed | Leaves, Increasing Leaf Size | Not Observed | Not Observed | Leaves, Increasing Leaf Size | Not Observed | Goutweed - leaves, increasing leaf size | Not Observed |
| Washington | Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads, Open Flowers | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Colored Leaves | Not Observed | Not Observed | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size, Flower Buds/Flower Heads | Initial Growth, Breaking leaf buds, Leaves, Increasing Leaf Size | Not Observed | leaves, flower buds, open flowers |



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