Vermont Forest Health

Insect and Disease Observations — September 2023

Department of Forests, Parks & Recreation September 2023 <u>vtforest.com</u>

Weather

The end of September marks the official start of the fall season. On average, this month was warmer and drier than September of 2022. State-wide temperatures averaged 60.9 °F — 3 degrees warmer than September of last year. Statewide precipitation averaged 3.1 inches, which was 2.47 inches less than September of last year.

Temperature and precipitation departure from normal. Maps and data: <u>Northeast Regional</u> <u>Climate Center</u>.





Drought Update

Although there was less monthly rainfall, total summer rainfall continued to lessen drought severity throughout the state. On May 24th, the U.S. Drought Monitor listed 100% of the state as no drought. At this time last year, 2.02% of the state was listed in moderate drought, 52.35% as abnormally dry, and 45.63% as no drought.

Drought comparison between September 2022 and 2023. Map and data: <u>U.S.</u> Drought Monitor.

Native Forest Stressors

Forest tent caterpillar (FTC, Malacosoma disstria) populations continue to decrease in Vermont following an outbreak between 2016 and 2018. These caterpillars are native hardwood defoliators and are commonly found feeding on sugar maples (*Acer* spp.) and ash (*Fraxinus* spp.) in mixed hardwood forests.



2016 FTC outbreak. Photo credit: FPR Staff.



Average FTC trap contents decreased in 2023 from 0.14 moths per trap to 0.00 moths per trap.

<u>Spruce budworm</u> (SBW, *Choristoneura fumiferana*) trap catches decreased this year, following a historic count in 2022 (99.3 moths/trap). Decreased trap counts in 2023 and low larval surveys (data not shown) support evidence that 2022 moths were blown down from Canada's long-term SBW outbreak, and that moths did not mate and reproduce in Vermont. This native softwood defoliator foods on balsam

softwood defoliator feeds on balsam fir (*Abies balsamea*), white spruce (*Picea glauca*), and black spruce (*P. mariana*). In consecutive years of severe outbreaks, trees may experience complete defoliation which can lead to dieback and mortality.

Average SBW trap contents decreased in 2023 from 99.3 moths per trap to 9.6 moths per trap.



Supplemental Sightings



<u>Poplar borer</u> (*Saperda calcarata*) was reported in Caledonia County. Larvae feed in downed or weakened poplar (*Populus* spp.) trees, taking up to five years to develop. Infestation symptoms include swollen areas on the trunk or large branches, exit holes, and oozing reddish sap. Infestations may kill small trees and greatly weaken larger trees, making them prone to wind, ice, and snow breakage.

Adult poplar borers. Photo credit: James Solomon, USDA Forest Service, <u>Bugwood</u>.

<u>Hickory tussock moth</u> (*Lophocampa caryae*) was reported in Caledonia County. Adults fly from May to June and larvae are present from July to September. Adults are reddish brown with lighter spots, larvae are white with black markings. Larvae feed on deciduous trees and shrubs. While local populations can be quite high, this species rarely causes serious defoliation.

Hickory tussock moth. Photo credit: FPR Staff.





Jumping worms (Amynthas agrestis, A. tokionensis, and Metaphire hilgendofri) continue to be reported across many parts of the state. These non-native earthworms are glossy, dark gray-brown in color with a <u>whitish cli-</u> <u>tellum</u>. When handled, they <u>thrash violently</u>. Infestations rapidly break down organic matter, leading to increased erosion, decreased nutrients, and reduced regeneration in forested stands. For more information please visit <u>VTinvasives</u>.

Jumping worm. Photo credit: Wisconsin DNR.

<u>Balsam woolly adelgid</u> (BWA, *Adelges piceae*) was reported in Caledonia County. BWA is an invasive insect that feeds on true firs. This insect feeds on phloem tissue from branch twigs and nodes. During feeding, digestive enzymes are injected into the tree, causing abnormal growth called "gouting". Gouting stunts growth and can lead to dieback and decline. BWA has low mobility and relies on wind dispersal, so populations are sporadic across Vermont.

BWA. Photo credit: FPR Staff.





<u>Spotted tussock moth</u> (*Lophocampa maculata*) larvae were reported in Washington County. Larvae preferentially feed on poplar (*Populus* spp.) and willow (*Salix* spp.), but will also feed on birch (*Betula* spp.), alder (*Alnus* spp.), basswood (*Tilia* spp.), maple (*Acer* spp.) and oak (*Quercus* spp.).

Hickory tussock moth caterpillar. Photo credit: Whitney Cranshaw, Colorado State University, <u>Bugwood</u>.

Witch-hazel gall cone aphid (Hormaphis hamamelidis) galls were reported in Orange County. This aphid causes centimeter-long conical galls to form on the top of witch-hazel (Hamamelis virginiana) leaves. Galls are green, reddish, or brown in color. Feeding by newly hatched aphids induces the formation of the gall. This species does not cause lasting damage to the plant.



H. hamamelidis galls. Photo credit: Lacy L. Hyche, Auburn University, <u>Bugwood</u>.



<u>Resinous polypore</u> (*Ischnoderma resinosum*) was observed in Lamoille County on a dead sugar maple (*Acer saccharum*). This brown, velvety bracken fungus grows on logs, stumps, and standing dead deciduous trees in September and October. It has a creamy white margin. Mycelium of this species are an important decomposer of dead wood. This species does not impact living trees.

Resinous polypore. Photo credit: Joseph Berger, <u>Bugwood</u>.

Lungwort (Lobaria spp.) was reported in Lamoille County. Lungworts are lichens, which form due to a symbiotic relationship between fungi and algae. They grow on tree bark and rocks in forested ecosystems and do not harm host trees. When they are knocked off of hosts during storms, decomposition of the lungwort releases nitrogen into the soil.

> Lungwort. Photo credit: Rob Routledge, Sault College, <u>Bugwood</u>.



Foraging for Fungi

Fairy ring marasmius (Marasmius oreades) is a saprotrophic, edible mushroom commonly found growing in rings in lawns. This mushroom's cap is 1-5 cm wide and broadly bell-shaped when immature and matures into a broadly convex form with a central bump. When fresh, this mushroom is white to reddish tan in color, but can change color as it dries. The gills are white to pale tan and attach to, but do not extend down, the stem. It gives off a white spore print. The stem is 2-8 cm long and 1.5-6 mm thick with similar color to the cap. This mushroom can be confused with the edible meadow mushroom (Agaricus porphyrocephalus var. pallidus), and poisonous <u>destroying angel</u> (Amanita bisporigera). For more information on these lookalikes, check out June 2022's Forest Health Insect and Disease Observation Report.



A: Fairy ring maramius. B: Meadow mushrooms. C: Destroying angel. Photo and information credits: Michael Kuo, mushroomexpert.



A: <u>Peppery milkcap</u>. B: <u>Deceiving</u> <u>milkcap</u>. Photo and information credits: Michael Kuo, mushroomexpert.

Peppery milkcap (*Lactifluus piperatus*) is a bitter tasting mushroom that has a mycorrhizal association with oaks (Quercus spp.) and other hardwoods. Its cap is 4-15 cm wide and broadly convex to flat. It is white in color and may turn yellow with age. The underside of the cap has crowded white to pale crème gills that are attached to the stem and are frequently forked. It gives off a white spore print. Its stem is 2-8 cm long and 1-2.5 cm thick with similar color to the cap. When damaged, this mushroom has white milk that may slowly turn yellow in color. This mushroom can be confused with another bitter edible, the deceiving milkcap (Lactifluus deceptivus). This mushroom is also mycorrhizal with oaks, but can have associations with other hardwoods and conifers. Its cap is 8-16 cm wide but has been reported up to 30 cm. It is convex to vase-shaped, smooth, and white in color, but becomes brownish and scaly with age. The underside of the cap has whiteish to tan gills that stain brownish when damaged and are attached to the stem. It gives off a white spore print. Its stem is 3-9 cm long and 1-4 cm wide with similar color and scales to the cap. When damaged, this mushroom has a white milk that may stain brown.

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 mush-rooms mentioned in this publication.*

Pests in the Spotlight: Spotted Lanternfly

The spotted lanternfly (SLF, *Lycorma delicatula*) is an invasive planthopper native to Asia that was first detected in the United States in Pennsylvania in 2014. Since then, this species has been reported as established with an infestation in 14 U.S. states and reported individually without infestation in two U.S. states, including Vermont.

Although this invasive planthopper is a poor flyer, it can travel long distances using humans, hitching rides on surfaces including but not limited to, vehicles, firewood, nursery stock, and stone shipments. This insect has one generation per year. Eggs begin to be laid in September and will overwinter and hatch in April. This insect feeds in both the nymph and adult stage, which extends the damage period



Current distribution of SLF in the United States. Map and data credit: <u>NY State Inte-</u> <u>grated Pest Management Program</u>.

from April through December. SLF has been reported on more than 70 plant species and can therefore drastically alter our forested and agricultural landscapes. SLF uses their piercing and sucking mouthparts to consume phloem in plant tissue. Heavy feeding can cause oozing, wilting, reduced growth, dieback, and mortality in infested hosts. Oozing/weeping wounds on plants in conjunction with SLF honeydew secretions attract sooty mold to infested plants. This black-colored mold covers the plant and SLF secretions and can reduce photosynthesis as well as attract other nuisance insects, like wasps, with its strong odor. For more information, or to report a sighting, please visit <u>VTInvasives</u>.



Life stages of SLF. Photo credit: PennState.

Invasive Plant Phenology

In the second full week of each month, volunteers around the state observe and report invasive plant phenophases. Their observations ae compiled here, creating both a timely resource for best management options and a historic record of plant behavior. We aspire to include observations from every Vermont county in this project, and more observers are always welcome. If you would like to be involved in this effort, please contact <u>pauline.swislocki@vermont.gov</u> or check our volunteer page for other opportunities to get involved. For more information about the phenology of



Burning bush. Photo credit: Leslie J. Mehrhoff, UCONN, Bugwood.

invasive plants in Vermont, check out Bud Buds, a podcast from the Invasive Plant Program.

Addison – common buckthorn: leaves, fruit/ unripe fruit, ripe fruit; common reed: leaves, flowers/ flower buds, open flowers; purple loosestrife: leaves, fruit/ unripe fruit, ripe fruit.

Bennington – garlic mustard: leaves, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop; knotweed: leaves, open flowers.

Caledonia – burning bush: leaves, fruit/ unripe fruit, ripe fruit; common barberry: leaves; common buckthorn: leaves, fruit/ unripe fruit, ripe fruit; common reed: leaves, open flowers; glossy buckthorn: leaves, fruit/ unripe fruit, ripe fruit; goutweed: leaves, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop; Japanese barberry: leaves; knotweed: leaves, open flowers; round leaf bittersweet: leaves; shrub honeysuckle: leaves.

Chittenden – <u>autumn olive</u>: leaves; <u>burning bush</u>: leaves, colored leaves, fruit/ unripe fruit; common buckthorn: leaves, fruit/ unripe fruit, ripe fruit; common reed: leaves, flowers/ flower buds, open flowers, pollen release; garlic mustard: recent fruit or seed drop, initial growth; glossy buckthorn: leaves, fruit/ unripe fruit, ripe fruit; goutweed: leaves; Japanese barberry: leaves, fruit/ unripe fruit, ripe fruit; knotweed: leaves, flowers/ flower buds, open flowers, evidence of prior infestation; multiflora rose: leaves, fruit/ unripe fruit, ripe fruit; purple loosestrife: leaves, flowers/ flower buds, open flowers, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop; round leaf bittersweet: leaves, fruit/ unripe fruit, ripe fruit; shrub honeysuckle: leaves, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop; wild parsnip: leaves, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop, evidence of prior infestation.

Franklin – burning bush: leaves, fruit/ unripe fruit; common buckthorn: leaves, fruit/unripe fruit, ripe fruit, recent fruit or seed drop; knotweed: leaves, flowers/flower buds, open flowers.

Grand Isle – common buckthorn: leaves, fruit/ unripe fruit, ripe fruit, recent fruit or seed drop; purple loosestrife: leaves, flowers/ flower buds, open flowers; wild parsnip: evidence of prior infestation.

	For more information.	Windsor & Windham Counties	Springfield (802) 289-0613 Rutland (802) 786-0060
FORESTS, PARKS & RECREATION	contact the Forest	Addison, Chittenden, Franklin & Grand Isle Counties	Essex Junction (802) 879-6565
VERMONT	Biology Laboratory	Lamoille, Orange & Washington Counties	Barre (802) 476-0170
AGENCY OF NATURAL RESOURCES	at 802-505-1585 01.	Caledonia, Orieans & Essex Councies	St. Johnsbury (802) 751-0110

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