

# THE PURDUE LANDSCAPE REPORT

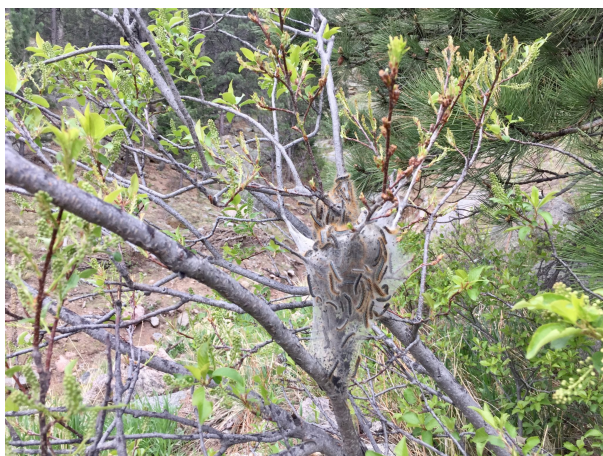
## In This Issue

- [The return of tent caterpillars: What's it means for your yard?](#)
- [Mounds upon Mounds of Mulch](#)
- [Managing Emerald Ash Borer During the Covid-19 Pandemic...](#)

## The return of tent caterpillars: What's it means for your yard?

(Elizabeth Barnes, [barne175@purdue.edu](mailto:barne175@purdue.edu))

Bud break doesn't just mean the arrival flowers and leaves, it also means tent caterpillars begin to hatch. Within a few weeks, troops of these caterpillars can cover tree branches with their silk tents. So, should you be concerned about them? Read on to find out!



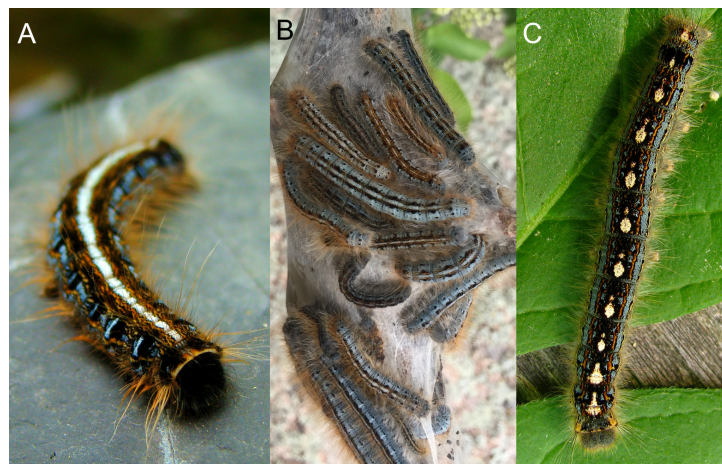
A typical western tent caterpillar tent. These tents can usually be found in the crooks of major branches on trees and medium sized shrubs.

### What are they?

You may encounter three species of tent caterpillar in Indiana: Forest tent caterpillar (*Malacosoma disstria*), Western tent caterpillar (*M. californicum*), and eastern tent caterpillar (*M. americanum*). All three species live in groups of anywhere from 40 to 200 individuals that stay together until shortly before they pupate. Western and eastern tent caterpillars both build tents that they live in between food runs (figure 1) whereas forest tent caterpillars roam in groups without a home tent. They are loosely social and will lay down pheromone trails to branches that are good food sources.

### Look-a-likes

Although their tents can make them distinctive, there are several other species of caterpillars that tent caterpillars can be confused with. Here are a couple of tricks to telling them apart from other species. First, check if the caterpillar you're looking at is fuzzy. All tent caterpillars are covered in fuzzy hairs, so if it's smooth or spikey it's not a tent caterpillar. Next, check for big tufts of hair at either end of its body. Tent caterpillars lack these tufts. Finally, check for either a stripe (eastern and western tent caterpillars) or a line of penguins (forest tent caterpillars) on its back (figure 2). If the caterpillar you're looking at lacks any of these traits, it's probably not a tent caterpillar.



A. Eastern tent caterpillar have a distinctive white stripe down their backs, B. western tent caterpillar are slate blue with a pair of black stripes, and C. forest tent caterpillar have a pattern of dots on their back that resemble penguins or bowling pins. Image credits: A. Ashley Waldron B. Elizabeth Barnes C. Audrey R. Hoff

### What do they eat?

All three species of caterpillars eat a wide range of plants, particularly later in the spring. They especially favor plants in the Rosaceae family like cherry, apple, and chokecherry. As the spring progresses and the caterpillars get bigger, they will move onto a wide range of other deciduous plants.

### What damage do they do?

Although some people may find them unsightly, in most years tent caterpillars do not cause serious injury to their host plants and can even be beneficial to their environment by providing a food source for wildlife. Typically, tent caterpillars only defoliate a few branches and only actively feed for a few weeks. Even in outbreak years when they can fully defoliate small trees, most plants are able to bounce back to health after the caterpillars

have moved on. However, if the tree is defoliated multiple years in a row or is dealing with another stress like drought it may lose branches or even die. See [this PLR article](#) to evaluate the potential impact of defoliation on your tree.

If you do wish to remove tent caterpillars from your trees, there are a wide range of options available to you. One of the easiest ways to get rid of tent caterpillars is manually removing them. Wait until most of the caterpillars are in their tent and then simply pull the tent off the tree, place it in a bag, and freeze it. Tent caterpillars leave their tents multiple times a day to feed so your best chance for catching them all in their tent is a night. You may want to wear gloves to remove them from their tree because some people have an allergic reaction to their hairs. In addition, most of the options described in [this article](#) for treatment of fall webworms will work for tent caterpillars (make sure to double check label instructions).

If you think you've found some tent caterpillars but aren't sure, feel free to reach out to the author or post it on [iNaturalist](#) or [BugGuide](#) for ID help!

---

## Mounds upon Mounds of Mulch

(John Bonkowski, [jbonkows@purdue.edu](mailto:jbonkows@purdue.edu))

Usage of mulch at the base of trees is a very common and recommended practice to protect the trunk from mower damage, as well as improve root conditions by preventing weed and grass growth in the root zone. Mulch also increases moisture retention in the soil, and improves soil quality as it breaks down over time. However, there is such a thing as “too much of a good thing.” Over-application of mulch, in the form of piles or “volcanoes” mounded up the trunk of a tree, will prove detrimental to the health of the tree and can lead to premature death (Figure 1, 2, 3). This is an unfortunate and fairly common occurrence in the landscape.



Figure 1: Mature tree with mulch mounded onto the trunk (i.e. volcano mulch).



Figure 2: Various tree species at a single site where too much

mulch was applied. Photo Credit Lindsey Purcell



Figure 3: A tree with a volcano of mulch piled against its trunk  
Photo Credit Lindsey Purcell



Figure 4: Roots growing in odd places and making the best of a difficult situation.

Plants are remarkably plastic organisms, meaning they have an incredible capacity to adapt to the environment and conditions around them (Figure 4). They have to because they cannot pick themselves up and find better climes. This is why you find them growing in weird situations or conformations. In light of that, plants have expected growth patterns: stems, trunks, leaves are above ground; roots are (mostly) below ground.

Roots belong underground. However, when too much mulch is applied (4-6 inches or more) and is in contact with the above ground trunk, you can effectively change the “perceived soil line” by the tree. This can trick some trees into developing roots directly out of the trunk that grow into the mulch which are more susceptible to drought stress than below ground roots. Thick mulch layers can also cause established roots to grow within the mulch layer above the soil and circle around in the tree. Roots that circle around the tree have the potential to grow into other roots (even the trunk flare) and girdle the vascular system of the tree, leading to stress and, under severe circumstances, early death.

Another issue with mulch in direct contact with the trunk is that the moisture it provides will cause the bark to become soft and eventually breakdown (Figure 5). Softened bark below the mulch is attractive to rodents, like mice and voles, which will lead to burrows, nesting and feeding injury, which can predispose the tree to infection by opportunistic pathogens that can rot wood.





Figure 5: Left – Mulch applied improperly and unevenly to the base of a tree. Right – mulch pulled back to show some of the trunk flare.



Figure 6: Properly applied mulch in the landscape.

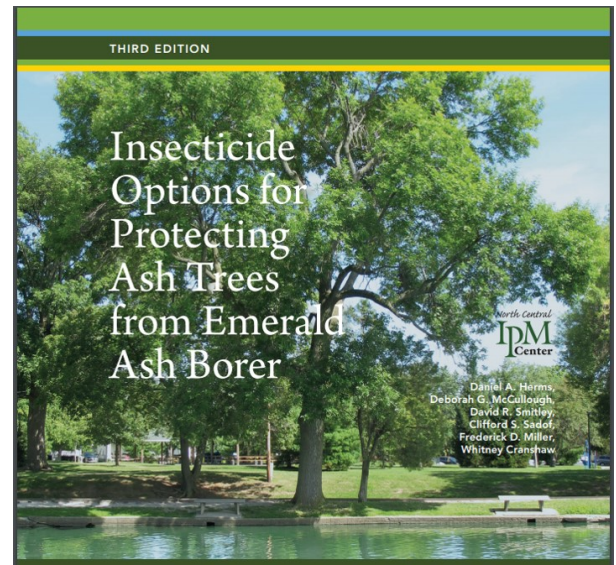
Current recommendations for mulching include applying a 2-3-inch deep mulch layer to the ground from the trunk to a radius of 3-5 feet or larger. The trunk flare should still be visible and mulch should not be in direct contact with the bark; pull it back an inch or two (Figure 6).

The side-effects of volcano mulching occur slowly because it takes time for roots to grow and girdle, or decay to set in, or rodents to make a comfy home. Those misapplying mulch will likely blame tree decline on other problems. If you have been asked by a client to mound your organic matter or work on a crew that habitually creates miniature Mount Kilimanjaro's with mulch, please spread the word to spread out the mulch.

## Managing Emerald Ash Borer During the Covid-19 Pandemic...

(Lindsey Purcell, [lapurcel@purdue.edu](mailto:lapurcel@purdue.edu)) & (Cliff Sadof, [csadof@purdue.edu](mailto:csadof@purdue.edu))

Labor issues and timing of tree care activities have been and will continue to be impacted by federal and state rulings as a result of CoVid-19. As a result of social distancing and confusion surrounding “essential services”, many plant health care technicians and business operations have been suspended. As the season progresses, these labor suspensions can make it difficult to apply pesticides and fertilizers when they can most benefit turf, ornamental and overstory trees.



### EAB Insecticide Recommendations

Emerald ash borer, *Agrillus planipennis*, continues to be the most serious problem facing ash trees in much of North America. Timing is important to get the best results with the least amount of canopy thinning and health maintenance. Data from several university studies have shown that spring insecticide treatments are consistently more effective than the same treatments applied in fall.

Research conducted in Purdue laboratories on large trees shows that this is particularly important if you are applying at three year intervals. If you are on a three-year schedule, delaying applications until the fall can allow adult beetles to emerge and lay eggs that will develop into larvae. If treatment is delayed until September, many of these larvae will have had the chance to complete most of their development. Although the fall treatment will kill those larvae that actively feeding, as well as any larvae produced the following year, the tree will have to heal from the summer's injury. Our field trials of large trees treated every 3 years showed more canopy loss (about 40%) in trees receiving fall applications when compared to spring applications (about 20%).

With an inability to treat in the spring, these are your options:

- If you are on a two year treatment schedule of emamectin benzoate::
  - Delay applications until the fall. Fall applications will kill larvae this fall and next spring. Fall applications will have you on your clients properties at a time when you can deliver other plant health care services.
  - Delay applications until the following spring. Our work and those of others show spring treatments every two years is as effective as every three
- If you are on a three year schedule or if you get a new request to treat for EAB, .
  - Get your application in as soon as possible after Covid restrictions are relaxed. During periods of drouth you need to irrigate the tree prior to

application to get uptake into the canopy. You may then continue on the same 3 year spring schedule if subsequent years.

<http://www.emeraldashborer.info> [accessed 2 March 2020].

Emeraldashborer.info. 2020. Regional Emerald Ash Borer Information Page.

Hermes, D. A., McCullough, D. G., Smitley, D. R., Sadof, C. S., Miller, F. D., and Cranshaw, W. 2019. Insecticide options for protecting ash trees from emerald ash borer, 3rd edition.

It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Purdue Landscape Report © Purdue University - [www.purduelandscape.org](http://www.purduelandscape.org)

Editor: Kyle Daniel | Department of Horticulture and Landscape Architecture, 625 Agriculture Mall Dr., West Lafayette, IN 47907