

Insects on Real Christmas Trees

Most real Christmas trees are free of insects and other arthropods. However, it is possible that some trees may harbor one or more species.

Christmas trees have been a tradition for hundreds of years and bring the beauty and amazing scents of the outdoors into our homes for the holidays. They are also an environmentally friendly choice, as Christmas trees are a renewable resource and can be easily recycled, unlike artificial trees.

Real Christmas trees are living trees grown outdoors and, like other living outdoor trees, they can harbor overwintering insects and other arthropods. Some of these arthropods can remain on a tree when it is brought indoors and can become active when exposed to warm indoor temperatures. Depending on the species, the arthropods may remain on the tree or may be attracted to nearby light sources such as windows (during the day) or lamps and other artificial lights (at night). However, because they are associated with living coniferous trees, **none of the species that might be introduced into a home via a real Christmas tree are dangerous to the home, its contents, or occupants.**



Arthropods found in Christmas trees generally overwinter as eggs or adults. Mechanical tree shakers, which are available at some retail lots, or vigorously shaking a tree can dislodge some arthropods, particularly adults. Insect egg masses, such as those laid by mantises, gypsy moths, and spotted lanternfly, can be scraped off the tree trunk or branches. Additionally, bird nests, which are considered decorative and good luck by some people, may contain bird parasites such as mites, and should be removed.

If arthropods are brought indoors with a real Christmas tree, control should be limited to non-chemical means. **Aerosol insect sprays are often flammable, usually not labeled for indoor use, and should not be sprayed on a Christmas tree.** Insects found on the tree should be left until the tree is removed from the home. Any arthropods that collect on ceilings, walls, or windows can be eliminated with a vacuum cleaner. Arthropods accidentally brought indoors are associated with living, outdoor trees. Low relative humidity (due to indoor heating) and lack of appropriate food means such arthropods usually die indoors within a short time.

Most real Christmas trees will be free of arthropods and no tree will have every group listed below. Occasionally, however, one or more of the following may find its way into your home on a tree.

Spotted lanternfly

Spotted lanternflies are a relatively new invasive insect pest. They are currently (as of December 2019) found in 13 counties in southeastern Pennsylvania, eight counties in New Jersey, two counties in Delaware, two counties in Maryland, and one county in Virginia (Figure 1). All affected states are under quarantine to prevent the spread of this destructive pest, so be sure to double check the latest range map as this publication ages. Although unlikely, spotted lanternfly eggs can occur on Christmas trees.



Spotted Lanternfly Known Distribution
Updated November 12, 2019

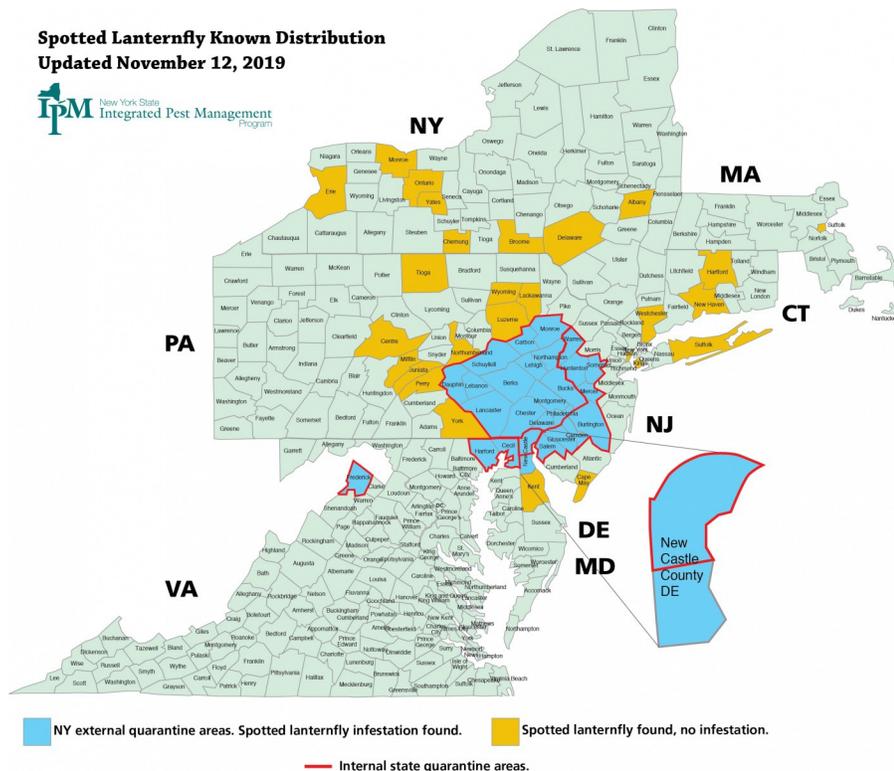


Figure 1. SLF spread map, November 2019.

Spotted lanternflies overwinter as brown egg masses that resemble dried mud (Figure 2). Egg masses are laid on any hard surface, particularly tree trunks. While spotted lanternfly do not feed on conifers, it is possible that they may deposit their eggs on Christmas trees. Although Christmas tree growers in the quarantine zone generally inspect trees before sale to prevent the spread of spotted lanternfly, there is the possibility an egg mass may be missed. If buyers are concerned about a tree they have purchased, or harvest a Christmas tree from their own property, they can visually inspect the trunk and branches of the tree for egg masses. If found, the egg masses can be easily scraped off the tree, sealed in a plastic bag with some rubbing alcohol, and disposed of in the trash.



Figure 2. SLF egg mass. Photo by: Emelie Swackhammer, Penn State Extension Educator

An egg mass that is brought indoors may hatch in a few weeks. The young nymphs are a distinctive black with white spots (Figure 3). The young nymphs cannot feed on a Christmas tree (they require soft, herbaceous plants when they're small), so will quickly die due to starvation and low indoor humidity. Spotted lanternflies do not bite people and are not a threat to people, pets, or structures if they hatch indoors.



Figure 3. SLF nymph. Photo by: PA Department of Agriculture

Because there is a possibility that an egg mass will not hatch if a tree is indoors for a short period of time (less than a few weeks), residents in and around the quarantine zone are encouraged to dispose of old Christmas trees via community tree recycling programs (which generally chip old trees) or burning (if allowed by the local municipality). If a Christmas tree is thrown outside before a spotted lanternfly egg mass hatches indoors, it could hatch in the spring and spread the population of this important invasive pest. To control the spread of spotted lanternfly, **it is imperative that visual inspection of the Christmas tree be carried out before transporting your tree.**

If you live outside the quarantine zone and spotted lanternflies hatch indoors from a Christmas tree, please [report the incident to the PA Department of Agriculture](#) (PA residents) or your state agricultural agency (non-PA residents).

For more information about SLF on Christmas trees, please refer to the fact sheet "[Should I Worry about Spotted Lanternfly on My Christmas Tree?](#)"

Adelgids

If a tree develops white "flocking" on needles, twigs, or bark, it probably has adelgids, which are tiny, aphid-like insects that feed on plant sap and secrete cottony wax filaments around their bodies. Pine bark adelgids (*Pineus strobi*) (Figures 4, 5) are found primarily on the twigs and trunks of white pine but are occasionally on Scotch and Austrian pines as well, and hemlock woolly adelgids (*Adelges tsugae*) (Figure 6) are found on eastern hemlocks*. Adelgids are sedentary and do not leave the tree. The adelgids themselves and the wax flocking they produce are harmless.



Figure 4. Pine Bark Adelgid. Photo by: Petr Kapitola, BugWood CC BY 3.0 US



Figure 5. Pine Bark Adelgid on tree bark. Photo by: Petr Kapitola, BugWood CC BY 3.0 US



Figure 6. Hemlock Woolly Adelgid. Photo by: Elizabeth Willhite, BugWood CC BY 3.0 US

*Note that while Scotch, white, and Austrian pines are usually available from commercial Christmas tree sellers, hemlocks are not as they have poor needle retention after being cut. However, they are included here as they're abundant in certain areas of eastern North America and may be used by people who cut Christmas trees from their own property.

Aphids

Giant conifer aphids (genus *Cinara*) (Figures 7, 8) can reach a length of 1/8 inch and are among the largest native aphids in North America. At least 152 species occur in North America and they can be found on most species of conifer. Most *Cinara* are shades of black, grey, and brown, with long legs, which are often concolorous with the body but can be shades of red. The initial generation that hatches is wingless, but if a Christmas tree remains indoors for an extended period (particularly if it is a live tree with a root ball), the aphids may reproduce and produce winged offspring. Giant conifer aphids usually stay on a tree, but will move off in search of a new host when the needles start to dry out.



Figures 7 and 8. *Cinara* winged (left) and *Cinara* (right). Photos by: Tom Murray, BugGuide CC BY-ND-NC 1.0

Balsam twig aphids (*Mindarus abietinus*) (Figure 9) are found primarily on true firs, especially Fraser and balsam firs, and occasionally on junipers and spruces. Balsam twig aphids are gray-green in color and much smaller than *Cinara* aphids. They overwinter as eggs, which normally hatch in the early spring outdoors; indoors, they may hatch before a Christmas tree is removed.



Figure 9. Balsam twig aphid, Photo by: Charley Eiseman, BugGuide CC BY-ND-NC 1.0

Most conifer-feeding aphids are extremely host specific and only feed on a single plant species. They will therefore not feed on or pose any risk to houseplants.

Bark beetles

Bark and ambrosia beetles feed on stressed, dying, and dead trees, and depending on the health of the Christmas tree, may have colonized it before it was harvested. Larval beetles bore through branches or trunk of a tree, which may create a very fine sawdust that is pushed from small holes (Figure 10). If a Christmas tree is indoors for an extended period, the adult beetles, which are generally small, cylindrical brown beetles (Figure 11), may develop and emerge. Fortunately, the bark and ambrosia beetles that can emerge from a Christmas tree require wood with high moisture content to develop; the structural wood found inside homes and furniture is too dry for the beetles to colonize and they do not pose a threat to such wood. Like other insects, bark beetles that emerge indoors are intolerant of low air humidity and usually die in a short time.



Figure 10. Ips frass. Photo by: Brytten Steed, BugWood CC BY 3.0 US



Figure 11. Ips adult. Photo by: Ken Walker, BugWood CC BY 3.0 US

Mites

Many species of predatory mites overwinter as adults and become active when exposed to warm temperatures in the home. They generally remain on the tree, where they may prey on insect and mite eggs. Most of these tiny, light-colored mites will go unnoticed. However, a few groups, including whirligig mites and concrete mites are somewhat larger and brightly colored. None of the predatory mites associated with Christmas trees bite or otherwise pose a threat to people and pets.

Several species of parasitic bird mites may be found in abandoned bird nests. Although these mites are generally not present in nests during in winter, bird nests on the tree should be removed to assure that no mites are brought into the home.

Mantises

Four species of mantises are present in Pennsylvania, the native Carolina mantis and introduced Chinese, narrow-winged, and European mantises (*Stagmomantis carolina*, *Tenodera sinensis*, *T. angustipennis*, and *Mantis religiosa*, respectively). All four species produce brown, frothy-looking egg masses that are attached to plants (Figure 12), including conifer twigs and branches. When brought indoors, these egg masses will hatch after several weeks and produce dozens of baby mantises. Mantises are predatory and cannibalistic, so will eat each other if no other food is present, as is usually the case indoors during the winter.



Figure 12 - Carolina mantis (left) Photo by: Beatriz Moisset, Bugguide CC BY-ND-NC 1.0; Chinese mantis (right) Photo by: Marla Mertz, Bugguide CC BY-ND-NC 1.0

The best control is to look for and remove any egg masses before a tree is brought indoors. This is best done by cutting out the twig or branch with an attached egg mass and leaving it in a shrub or other plant outdoors. In the spring, the eggs will hatch at the appropriate time and the baby mantises will be able to find enough food.

The popular misconception that mantises are protected by law may prompt people to attempt to keep them alive until they can be released outdoors. However, there is no such law that protects mantises and baby mantises are extremely difficult to keep alive without an abundant supply of tiny insects, such as fruit flies. Additionally, even if one or a few are kept alive through the winter, they will be out of synch with insect prey and wild mantises if released outdoors in the spring, so will likely starve and not have an opportunity to reproduce.

Bark lice

Bark lice, which are also called psocids (Figure 13), are small, often winged, soft-bodied insects that are usually gray or brown in color. Bark lice are commonly found on outdoor trees, including Christmas trees, where they feed on a variety of materials that accumulate on bark and leaves, including fungus, mold, pollen, algae, and dead insects. Despite their name containing the word "lice", psocids are not parasitic and cannot bite or feed on people. Because they are soft-bodied and most species require high humidity, bark lice quickly die due to the low humidity conditions in most homes.



Figure 13. psocid. Photo by: Jessica Louque, BugWood CC BY 3.0 US

Scale insects

Many people do not recognize scale insects as insects because they are usually covered by a waxy covering and do not move. However, the youngest stage, which are called crawlers, are extremely small and do move, which can cause distress when they appear in large numbers

The most common scale insect on Christmas trees are probably pine needle scales (*Chionaspis pinifolia*) (Figure 14). Adult females are approximately 1/8" long, covered by a white waxy cover, and are always found on conifer needles. Pine needle scales overwinter as eggs under a mother scale's cover and crawlers, which are tiny and red (Figure 15), emerge outdoors in April. When a Christmas tree is brought indoors, the crawlers may emerge after a couple weeks and crawl on the tree and perhaps even on the floor and walls near the tree. If found off the tree, the crawlers can be cleaned up with a damp towel.



Figure 14. Pine needle scale. Photo by: Robert J. Bauernfeind, BugWood CC BY 3.0 US



Figure 15. Pine needle scale crawler. Photo by: Lorraine Graney, BugWood CC BY 3.0 US

Pine tortoise scale and striped pine scale are two other species found on Christmas trees that do not produce crawlers indoors. Both scales overwinter as immatures and do not have sufficient time to mature and produce offspring on trees kept indoors. However, if they begin to feed they may excrete small amounts of a clear, sticky liquid known as honeydew.

Spiders

Spiders found on Christmas trees are predators of insects and are not dangerous to people or pets. They are either overwintering species that have become active or spiderlings that have hatched after being exposed to warm temperatures. In most cases, they will remain on the tree and go unnoticed. But, if they venture off, they may weave small webs on walls, ceilings or furniture. These webs, and their inhabitants, can be removed easily with a vacuum cleaner or dusting brush. It is important to remember that the spiders brought in with a Christmas tree are not indoor species and will die in a short time due to the unsuitable indoor environment.

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