

This article appeared in The Ohio Woodland Journal, Vol. 18, No. 4 (Fall 2011), the official publication of the Ohio Tree Farm System. Call 888. 388. 7337 for subscriptions.

Focus on Forest Health

What's Killing all of our Pin Oak Trees?

Lane Gandee, Interim Forest Health Forester, ODNR Division of Forestry

This is a question many landowners in northeast Ohio are likely asking themselves this summer. It was the same question landowners found themselves asking in southern Ohio back in 1997-98. Fortunately for both of them, the news, for a change, is actually good for our increasingly battered Ohio forests. That is, nothing is killing them. It is merely a large outbreak of a pesky little critter that goes by the ominous name of scarlet oak sawfly, which thankfully is a native pest.

First reported in mid-July of 1997 by property owners concerned about browning in the tops of their oaks in Lawrence, Scioto, and Adams counties, ground checking found the second generation of the insect's larvae munching its way across nearly 175,000 acres in southern Ohio. A more intensive survey in 1998 revealed that sawfly damaged 294,426 acres of forest in the same general region as the previous year. Interestingly, Ohio wasn't the only state affected. Neighboring states also reported damage caused by the scarlet oak sawfly larvae that summer.

Flash forward to this summer – a summer similar to the 97-98 years with very warm temperatures and lots of rain. Dan Bartlett, service forester for the Ohio Division of Forestry in northeast Ohio, received an email from a concerned citizen who noticed something strange on his morning commute. The citizen simply asked, “Hear anything on the brown oaks south of Malvern?” and included a general description of what he saw. Bartlett, on his way to a meeting in Carrollton, Ohio, came upon the damage and was not prepared for what he saw. Bartlett states, “Just south of Malvern, along route 43, every pin oak tree in sight was 20 percent brown.” He instantly knew something was wrong. Then, a second landowner from Wilmot in Stark County called and asked Bartlett if he knew what was attacking *his* pin oaks. And from the new caller's description, Bartlett surmised it was more of the same thing and started a plan of action.

Bartlett did some research, took pictures, retrieved samples, and quickly mapped the area. He found that a sawfly could be responsible for the type of browning he was witnessing. Samples were delivered to the Ohio Department of Agriculture, where State Entomologist Barbara Bloetscher confirmed the scarlet oak sawfly was back. Bartlett, with the aid of some computer mapping, estimates the affected area to be at least 10,000 acres, conservatively. The damage appears in Stark, Columbiana, and Carroll counties.

So, just what is this giant consumer of oak trees and how does it wreak havoc over such a large area? The scarlet oak sawfly (*Caliroa quercuscoccineae*) is actually a tiny wasp whose larvae feed on the leaves of oaks in the red oak group (Figure 1). The wasp gets its name from its adult form because the females have a saw-like ovipositor they use to

insert eggs in rows along the major leaf veins. Although the scarlet oak is its namesake, they will feed on pin, black, red, and very rarely, white oaks. The larvae are voracious eaters, grazing like cattle side by side across the bottom of leaves, eating everything except for the veins and upper leaf epidermis (Figure 2). The epidermis dries out, turns white, then eventually brown, and falls off the leaf, leaving behind the leaf veins which look like a “skeleton” of the leaf — the tell-tale symptom of this pest (Figure 3). The sawfly is thus listed as a skeletonizer or skeletonizing pest.

The sawfly over-winters inside cocoons in the leaf litter and emerges in the spring. They have 2-3 generations per season, depending on weather for favorable growth. This year we had the kind of weather for this insect to thrive. According to David Shetlar, Ohio State University entomologist, the population of the sawfly is usually kept in check by predators and parasites. But slowly, over time, they recover and can build their numbers to the level we are seeing now in northeast Ohio and in previous years in the southern part of the state. He states this cycle is normal, and the sawfly’s enemies will soon catch up to it and their numbers will return to normal. Since the outbreak only lasts one-to-two years, the oaks can usually cope with the damage. However, if an outbreak lasts longer, vigor will be reduced and some stressed trees can succumb as other pests attack the oaks.

If you noticed the tell-tale skeletonized oak leaves, it may be the scarlet oak sawfly. Next year’s aerial survey will give us a better picture of this insect’s path, but in the meantime, please let your area state or private forester or OSU Extension office know if you suspect having this visitor on your oak trees.

Lane Gandee is conducting surveys of various forest pests in Ohio, including bacterial leaf scorch, beech bark disease, sudden oak death, hemlock woolly adelgid, and thousand canker disease. Thousand canker disease of black walnut has not been found in Ohio thus far, but insect and disease monitoring is important for early detection and control.



Figure 1. Adult scarlet oak sawfly
Photo courtesy of G. and E. DeLange

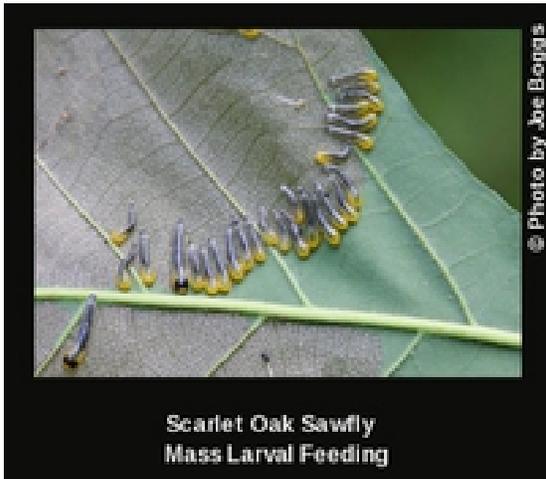


Figure 2. Scarlet oak sawfly feeding
Photo courtesy of Joe Boggs, OSU Extension



Figure 3. Skeletonization of an oak leaf
Photo courtesy of North Carolina State University