

Pine False Webworm—potential threat to NY's white pine 73

By Douglas C. Allen

Growing concern about this defoliator is a result of two current outbreaks in North America, one in northern New York and another in eastern Ontario. For several decades following its introduction into the United States from Europe around 1925, this insect was considered little more than an occasional pest of ornamental red, white, Scots, mugho, Austrian, Swiss mountain, and Japanese red pines; or an infrequent problem of red and Scots pine in Christmas tree plantations.



Fig 1. Nest constructed by a colony of pine false webworm (between arrows). Note on this and the two adjacent shoots to the left only old foliage has been consumed.

Since 1981 in eastern St. Lawrence and western Franklin counties of New York and the mid-1990s in Ontario, however, heavy defoliation has occurred to stands of saw-timber size white pine. The New York outbreak first appeared in 1981 on 75 acres of Scots pine near Fort Jackson, approximately 15 miles east of Potsdam. The infestation has persisted at this location for the past 17 years and from here spread to most Scots and white pine stands encompassed within an area of approximately 450,000 acres.

Because little natural mortality occurs in populations of this introduced pest, annual

survival in all life stages is very high. Consequently, the infestation is expected to persist at damaging levels and to continue spreading south and east in New York.

An Odd Name! - People who are not familiar with forest insects find the name "pine false webworm" confusing. It feeds on pine and in fact does construct a web or nest within which the caterpillars live (Fig. 1). So why refer to it as a "false" webworm? I think the purpose is to distinguish this sawfly, which belongs to a group of insects in the Order Hymenoptera (hy-men-op-ter-ah) (along with the wasps, bees, hornets, etc.), from the true pine webworm which constructs a similar nest but belongs to the moth and butterfly Order Lepidoptera (lep-i-dop-ter-ah).

Appearance - The two things a forest owner is most likely to spot when the pine false webworm occurs in a pine stand are the large, distinctly colored adults and conspicuous nests made by the gregarious caterpillars.

The wasp-like adults are present for only

a short time from May through early June, but they are readily noticed because of their size, appearance and very active behavior.



Fig. 2. Female pine false webworm.

The shiny blue-black females are approximately 7/16 to 1/2 inch long and have a bright orange head (Fig. 2). Males also are predominantly blue-black but slightly smaller (3/8 inch or so in length) with a small patch of yellow to yellow-orange on the front of an otherwise black head. Adults are capable of flying but generally remain airborne for only short distances and spend most of their time flitting from branch to

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Fig.3. Opened nest. Caterpillar is immersed in a mixture of dried needle fragments, silk strands and dried fecal pellets.

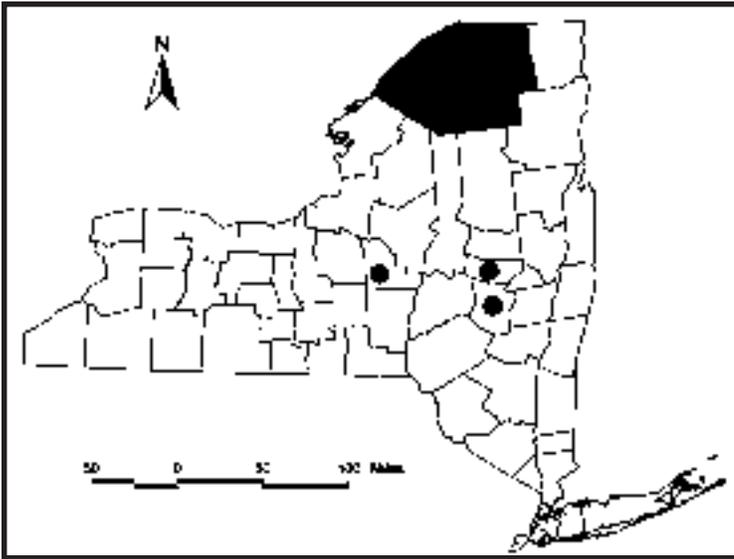


Fig.4. Approximate location of known infestations in New York. The current outbreak occurs in St. Lawrence and Franklin Counties (shaded).

branch or crawling on the ground, tree boles and foliage.

The second piece of evidence that a forest owner is likely to notice are the webs or nests which become especially conspicuous in late June and early July. Shortly after egg hatch, small groups of caterpillars begin constructing elongate nests of silk, dried fecal pellets and bits of dried foliage (Fig. 3). Each nest is 4 to 6 inches long when caterpillars are full grown and usually is wrapped around the previous year's twig. Presumably, this structure protects the insects from adverse weather and may discourage many natural enemies.

Damage - pine false webworm prefers old foliage (Fig. 1) and only when populations are high and competition for food is intense will it consume needles of the current year. Consequently, even following a

repeated, heavy defoliation.

Significant growth loss occurs each year of heavy defoliation; that is, when all old foliage is consumed and partial feeding occurs to current-year needles. However, tree mortality usually does not materialize until stands have experienced 5 to 7 successive years of heavy defoliation, at which time trees are weakened enough to encourage invasion by bark beetles.

The Webworm Experience in New York - Webworm damage under forest conditions in New York was unheard of until the 1981 outbreak in eastern St. Lawrence county. In 1984, heavy defoliation appeared on 24 acres of large red pine in Schoharie County. This area and a 20-acre, lightly defoliated buffer zone was clearcut, which eliminated the problem. Additionally, two small (< an acre) areas of Scots

pine defoliation were reported during the late 1980s, one in Madison County and another in Montgomery County. Neither of the latter amounted to anything. Clearly, however, this insect is well distributed in eastern New York (Fig. 4).

year of heavy defoliation trees retain some foliage. Trees that look completely brown in July "green up" as the growing season progresses and current-year foliage has an opportunity to expand. The fact that trees usually retain a significant compliment of current-year foliage largely explains their ability to withstand

Management - Experimental work has been done in Canada with various insecticides, but no chemical controls have been attempted in New York. Plans are under way to explore the feasibility of developing biological control methods, such as introducing parasites or predators known to be important natural controls in Europe. The Canadian Forest Service is screening and evaluating promising agents and, hopefully, in the near future results of this preliminary research will allow us to undertake field trials. Before this can happen, a good deal of laboratory work must be done to assure that we liberate an agent that is very specific to the pine false webworm and is unlikely to disrupt life systems of native insects. In the meantime, we will continue to monitor the outbreak in northern New York, and I encourage any forest owner who detects the insect on their land to contact their local DEC office. ▲

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