

Forest Health Fact Sheet

Redheaded Pine Sawfly

Neodiprion lecontei Fitch

There are several species of sawflies that attack pines in Pennsylvania including the redheaded pine sawfly. This sawfly has the potential to cause widespread damage to young trees because it has two generations per year in Pennsylvania and, as a result, can consume all the needles on a conifer in a single season.

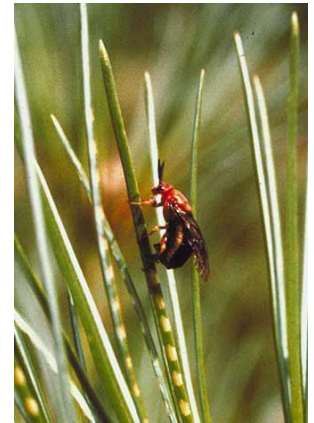


Description: Adults resemble flies in size (approximately 8 mm in length), but have two pairs of wings while true flies have only one pair. The antennae of the adult female are serrate (sawtoothed) with 19 segments, while those of the male are broad and feather like. The adult male sawfly is about one-third the size of the female. Newly hatched larvae are whitish, unspotted, and have a black head. As larvae feed and grow, their heads become reddish brown with a pair of black eye spots while the body turns greenish yellow with six rows of conspicuous black spots. Fully-grown larvae are about 25 mm long.

Distribution and Host Plants: The redheaded pine sawfly is native to southeastern Canada and throughout the eastern and southern United States. Redheaded pine sawflies prefer two- and three-needle pines including Scots, jack, shortleaf, loblolly, slash, red, and mugho. It has occasionally been found feeding on white pine, Norway spruce, and larch when these trees are near its preferred hosts.

Damage: The newly hatched larvae strip the needle surface leaving straw-like remains. Older larvae eat the entire needle down to the sheath. The larvae are strongly gregarious, feeding in groups of 100 or more. Usually only second-year needles are eaten but all foliage may be eaten on heavily infested trees. If a tree is entirely defoliated before the larvae mature, they will migrate to the nearest host tree.

Life History: The redheaded pine sawfly overwinters as a prepupa—a fully mature, second generation larva—in a cocoon in the duff under host trees. Some prepupae may remain dormant for two to three seasons before pupating. In early spring, the pupa is formed and the wasp-like adults emerge in a few weeks to mate. Females seek egg-laying sites in host trees. She will lay about 100 eggs in small groups in slits cut along the edges of the needles with her saw-like ovipositor—hence the name “sawfly”. Unmated females can still lay eggs but the offspring will all be males. The eggs hatch in about a month into caterpillar-like larvae. First generation larvae take about a month to mature, after which they drop to the duff and pupate immediately.



The basic life cycle of the redheaded pine sawfly is the same throughout its range. However, seasonal occurrence, duration of developmental stages, and number of generations per year vary at different latitudes. From New York north, this insect has only one generation. South of this line, there are usually two generations and south of South Carolina, three generations are found. In Pennsylvania, the first generation larvae are found in May through early June, and the second generation is found in July, August, and September.

Control: Natural enemies, such as rodents, birds, and predaceous and parasitic insects, play an important role in reducing sawfly populations. Chemical insecticides are effective in protecting young conifer plantations. For registered chemicals and formulations, see the current Pennsylvania Department of Agriculture recommendations or contact your county Penn State Extension Office.