Western Oak Looper

Forest Health Fact Sheet

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Dave Shaw, OSU

Individual oak looper caterpillar (top left), cluster of oak loopers (bottom right), and oak looper damage of Oregon white oak from defoliation by caterpillars during an outbreak (top right and bottom left).

Western oak looper (*Lambdina fiscellaria somniaria*) is a moth in the 'inchworm' family. Damage from this insect is caused by defoliation by the caterpillar stage. This insect prefers Oregon white oak but will also feed on adjacent ash and other broadleaf trees. Episodes of severe defoliation in Oregon have been observed mainly in the central Willamette Valley. Outbreaks tend to be infrequent, short and do not harm tree buds, thus oaks typically survive and flush new leaves the subsequent year after defoiation.

Hosts

- Major: Oregon white oak
- Minor: other broadleaf trees

Biology

Western oak looper occurs from Oregon northward into British Colombia. Adults are delicate-looking moths with a wingspan of 1.3"; wings are angular and cream to light brown with fine brown stripes across each wing. Adults lay eggs singly or scattered in an area, in the fall on various parts of trees, understory plants or on the forest floor. Caterpillars emerge and begin feeding in late spring-early summer and undergo 5-6 molts. Caterpillars reach about 1" long at maturity and are light brown to green with white and black designs that vary across molts. These inchworm caterpillars walk in a "looping" fashion. Larvae may suspend themselves from trees on individual strands of silk. In late summer to early fall after about 50 days of feeding, larvae seek shelter to pupate. Pupation occurs in protected sites on trees or in the duff on the forest floor. Pupation lasts about 24 days.

Jerald E. Dewey, USFS.

Oak looper adults have a 1.3" wingspan

There are many other similar-looking green and brownish caterpillars that occur on Oregon white oak in the spring, sometimes in large number. These caterpillars may also be seen hanging from strands

of silk from tree canopies. These other species are not known, from historical observations, to outbreak and cause larger level defoliation.

Damage

The only stage of western oak looper that feeds and causes damage is the larval (caterpillar) stage. Feeding is messy often leaving behind partially to mostly consumed leaves. Caterpillars leave behind leaf veins and leaf tissue remnants which quickly turn brown. Outbreaks are often highly visible in the summer as large portions or the whole canopy turns brown from feeding damage.

Christine Buhl, ODF

Gall-making insect damage

Oak looper damage should be differentiated from that made by gall-making insects (often followed by squirrel damage). Symptoms of this damage are clusters of intact brown leaves, scattered throughout the canopy. Similar to damage from gall-making insects, damage from oak looper does not typically kill trees and is purely aesthetic. Buds are not consumed and trees leaf out as normal the following spring.

Outbreak events usually last only 1-2 years which allows trees to bounce back even after severe, sequential years of defoliation. Follow-up outbreaks often occur in the footprint of the previous outbreak. Because oaks are deciduous and drop their leaves each year, the loss of leaves to defoliators is not too damaging.

Management

Natural

Outbreaks naturally subside on their own from predation and parasitism from various natural enemies.

Silvicultural

Stand susceptibility can be reduced by inter-planting non-hosts such as conifers like Willamette Valley pine among white oaks. Silvicultural management of this insect is not necessary even in oak savannah restoration areas because severe outbreaks are infrequent, do not last long enough to markedly reduce growth, and have not historically resulted in tree mortality.

Management highlights

- Outbreaks are infrequent and short and damaged is mainly aesthetic.
- In cases where management is warranted biological insecticides such as Btk have shown efficacy with limited non-target impacts.

ODF aerial survey

Western oak looper outbreak in the Willamette Valley

Insecticides

In rare cases application of pesticides may be warranted to control oak looper. Pesticide application after newly hatched larvae disperse to new foliage and begin to feed is most effective in reducing larval populations and preserving foliage. Biological insecticides such as *Bacillus thuringiensis kustaki* (Btk) are effective and have less of an impact on non-target species. This product only impacts butterflies and moth larvae actively feeding during the time of application.

When using pesticides, always read and follow the label

More information:

Oregon Dept. of Forestry, Forest Health
http://tinyurl.com/odf-foresthealth
2600 State St. Bldg. D, Salem, OR 97310
503-945-7200

Other references:

USFS Forest Health Protection
www.fs.usda.gov/goto/fhp/fidls

OSU Forestry Extension
http://extensionweb.forestry.oregonstate.edu/