

# Here come the bugs!

## Have you noticed crawling caterpillars, delicate chrysalises, or fluttering moths around oak trees?

Spring is the season for a variety of insects, including the California Oak Moth, Western Tussock Moth, and Leafroller. They attack oaks primarily, and occasionally wander onto other shrubs and trees.



**California Oak Moth**  
*Phryganidia californica*

**Western Tussock Moth**  
*Orgyia vetusta*

**Fruittree Leafroller**  
*Archips argyrospila*

### Why are there so many bugs this year?

These insect populations explode every five to ten years. This year, their large numbers coincide with the plentiful rain that generated robust tree, shrub and grass shoot growth -- supplies of tender food for caterpillars. We can expect two to three generations of insects this year, with the summer populations being the most damaging to trees.

### If my tree is affected, what should I do?

Your first option is to do nothing. As arborist Dave Docker with the City of Palo Alto explains, the "insect outbreaks are a natural part of our ecosystem and provide feasts for beneficial birds and others."

Most healthy trees are resilient and won't be killed by one bad infestation year; they'll simply grow a new crop of leaves. Trees stressed from something else, however, may be vulnerable to permanent damage.

### What are my options to treat the infestation?

If you are concerned about a city tree in Palo Alto, contact Public Works Urban Forestry Division.

If you have a tree on private property that is suffering from an infestation, you have a range of options, with varying levels of intensity:

- 1. SUPPRESSION:** Use a pressure hose to blast the insects off the tree. Stanford University has

reportedly used this technique in past years. It does not treat the problem permanently, but it can give your tree a break.

## 2. ORGANIC METHODS include natural extracts, bacterium, and horticultural oils.

**Natural Extracts, like pyrethrin.** [Pyrethrin](#) is an organic insecticide extracted from the chrysanthemum plant. When applied, it acts rapidly to “knock-out,” but not kill the insect. Pyrethrin can be found in products like Pyrenon, Red Arrow, and Pyrellin.

**Soil Bacterium, like Bt.** [DiPel](#) is a product that contains a potent strain of *Bacillus thuringiensis* (Bt), a naturally occurring soil bacterium. This product has the advantage that it specifically targets caterpillars; it is not toxic to humans or most beneficial insects.

**Horticultural Oils, like Neem oil or Azatrol.** [Neem oil](#) is an organic pesticide derived from the Neem tree which deters the insects from molting and laying eggs. Neem extract can be found in products like Triact 70. Azatrol is an oil that is not only harmful to insects when ingested, but also repels them and interferes with their molting process.

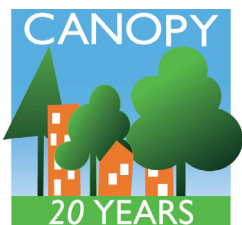
**3. REDUCED RISK chemical insecticides.** One example is [Conserve SC](#), which is less harmful to beneficial insects than most other synthetic products.

For additional information, check out the City of Palo Alto’s [Tree Technical Manual](#), Section 5.6 on Insect and Disease Control.

## Still have questions about your tree?

You can visit [Canopy’s Arborist List](#) to find a tree care company who can inspect your tree, help you weigh your options, and make a recommendation. If you do hire someone to spray your tree, make sure they have a pesticide applicator’s license.

*Special thanks to John McClenahan of S.P. McClenahan and Dave Dockter of the City of Palo Alto for sharing their tree care expertise!*



Canopy  
3921 East Bayshore Road  
Palo Alto, CA 94303  
[info@canopy.org](mailto:info@canopy.org) - 650-964-6110  
Visit us: [canopy.org](http://canopy.org)