

Western Spruce Budworm



1.



2.



Description

Western spruce budworm is the most widely distributed forest defoliator in western North America. Here in the West, there can be severe infestations in healthy Douglas fir, white fir, and spruce.



3.



4.



5.

Life Cycle

The western spruce budworm completes one cycle of development from egg to adult annually.

1. The adult female lays her eggs in an overlapping fashion during midsummer. It takes about ten days for these eggs to hatch.
After molting once, the larvae will hibernate for the winter on rough bark in the canopy and on the trunk of the tree.
2. Larvae re-emerge in spring. They tunnel first in old foliage and young cones, then move on to buds. (Note silk between top and left bud indicating infestation by a larva.)
3. Once the buds open, the larvae do most of their damage chewing the new needles.
4. Disturbed larvae often descend on silk threads from infested branch ends.
5. During late July to early August, brown or black pupae may be detected on branch tips. Adults emerge from the pupae and fly to seek a mate. The female will lay her eggs a day after mating.

Damage

You can see evidence of western spruce budworm all year. Dead branches or sparse foliage may indicate feeding during previous years.

Budworms have the potential to consume all new growth on the host tree. During outbreaks of three or more successive years, trees can die. The budworms create ideal conditions for other insect and disease invasions.



New growth chewed at branch ends due to new infestation



Dead top resulting from multiple years of infestation



New infestation



Old infestation showing many dead (gray) trees

Management

Budworm populations usually are kept under control by a combination of predators, parasites, climatic conditions, or insufficient food supplies. Seek advice from a professional forester about cultural and chemical solutions to western spruce budworm problems.



For more information about the management of western spruce budworm, contact your nearest office of the Colorado State Forest Service or USDA Forest Service.

