

Forest Insect Defoliators

Douglas-fir Tussock Moth *Orygia pseudotsugae* (McDunnough)

Hosts: Douglas-fir, white fir and spruce

Symptoms/signs:

The caterpillar of the Douglas-fir tussock moth is grayish with brightly colored tufts of hair and a shiny black head. There are also two long horns of black hairs behind the head and another at the rear of the body. In the Southwest, feeding often causes severe or nearly complete defoliation,



Figure 8. Adult male (left) and female (right) Douglas-fir tussock moth.



Figure 9. Adult female Douglas-fir tussock moth on egg mass. Note that female moth is wingless.

which often leads to top kill or tree mortality. Small cocoons and egg mass cases are attached to the underside of twigs and branches.

Biology: Eggs hatch from mid-May to early June and caterpillars feed on the current year's developing foliage. Young larvae are 4 to 7



Figure 10. Egg mass and early instar larvae of Douglas-fir tussock moth.

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Figure 11. Douglas-fir tussock moth late instar larva (a) and pupa (b).

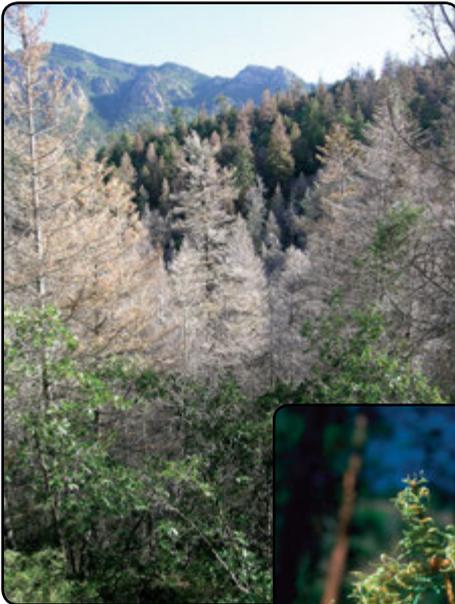


Figure 12. Douglas-fir tussock moth-caused damage to white fir in the Sandia Mountains, New Mexico.

Figure 13. Near view of Douglas-fir tussock moth-caused damage.



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mm long and covered with long, thin body hairs that later develop into tufts. Because the female moth is wingless, the primary means of dispersal from tree to tree is by windblown larvae. Young larvae congregate on the tops of defoliated trees and drop by silken threads that may be over 3 meters long. These threads eventually break from the tree and give a ballooning effect to the larvae. Mature larvae are about 20 to 30 mm long with a gray or brown body and a shiny black head. Two long hair pencils project forward from behind the head and another occurs at the rear of the body. Four tufts of brown or cream-colored hairs and red spots occur on the first four and last abdominal segments. Some people develop an itchy rash from exposure to the frequently airborne caterpillar hairs. After the caterpillars are about half-grown, they feed on all age classes of needles throughout the crown. Pupation occurs inside a thin, silk cocoon spun on the undersides of branches from late July to the end of August. Adults emerge shortly afterwards and the flightless female deposits egg masses on twigs and branches.

Effects: Severe outbreaks can cause significant mortality of both overstory and understory trees relatively quickly (1 or 2 years). Top-kill occurs in less severe outbreaks. Bark beetle epidemics can occur in tussock moth defoliated areas.

Similar Insects and Diseases: Early damage and webbing in trees may be similar to that caused by western spruce budworm; however, the larvae are very distinct.

References: 9, 24, 112