

FPL 17 – Forest Tent Caterpillar

The information accessed from this screen is based on the publication: Wood, C.S. 1992. Forest Tent Caterpillar. Forestry Canada, Forest Insect and Disease Survey, Forest Pest Leaflet No. 17 4p.

Introduction

The forest tent caterpillar, *Malacosoma disstria* Hbn, is one of the major defoliators of deciduous trees in the interior of British Columbia. Outbreaks covering large areas of trembling aspen stands have occurred periodically since the 1920s, and were continuous in parts of the interior from 1967 to 1976 and in the 1980s and 1990s.

Historically, outbreaks of this insect have caused more concern for homeowners ([Fig](#)), city and town officials, and for parks and recreation staff than for foresters. Often, the rapid defoliation of host trees by millions of caterpillars (resulting in mid-summer starkness and replication of winter settings) occurs before questions are asked, and by then it is much too late to implement protective treatments.

In addition to the temporary loss of amenity values, congregations of large numbers of caterpillars around homes and in public places and caterpillars falling from trees can cause serious distress to people who dislike insects. Occasionally, in B.C. and elsewhere, large numbers of the caterpillars on the ground have been known to disrupt rail and highway traffic; their smeared remains may make transportation routes slippery and hazardous.

The extensive stands of trembling aspen in northeastern B.C. have been severely infested during the period 1989-1991. During 1990, infestations and defoliation occurred at more than 370 locations covering 206 000 ha. The outbreaks have spilled into urban centers (Prince George) and many smaller communities. Undoubtedly, as long as a food supply for this insect exists, it will be important to those concerned about amenity and property values. As forest management develops in these forests, specialists in planning, forest health, forest recreation, and wood fibre production will likely become concerned as well.

Distribution and Hosts

This pest is native to North America and occurs throughout the broadleaf forests of Canada from British Columbia to the Maritimes. In British Columbia it is common throughout the interior range of its preferred host, trembling aspen ([Fig](#)). Other species of broadleaf trees and shrubs ([Fig](#)), and sometimes even conifers such as larch, can be defoliated in severe infestations.

Its close relative, the northern tent caterpillar, *Malacosoma californicum* pluviale Dyar, occurs in British Columbia, notably in southern urban forest areas and occasionally in northern deciduous forests.

Damage and Detection

Although outbreaks have lasted up to 7 years, no significant tree mortality has been recorded; branch mortality and growth reduction may occur in prolonged infestations. A second crop of leaves is usually produced in midsummer following severe defoliation.

Young larvae feed in groups on newly opened buds. Fully grown larvae congregate on the trunk or on large branches on the host trees; they move to other deciduous trees and shrubs when host trees are totally defoliated ([Fig](#)).

Life History

There is one generation a year. Larvae emerge from egg masses in early spring when the buds swell, and feed into June. During June to early July, larvae spin cocoons in leaves on the trees or in any sheltered place; they pupate in these cocoons. Moths emerge from the cocoons from 8 to 12 days after pupation and mate. Females lay 150-300 eggs in ring-like bands that encircle smaller twigs on the host trees. Fully formed larvae overwinter in the eggs.

Description

Several other insects may be mistaken for the forest tent caterpillar largely due to its inappropriate common name and its common occurrence across North America. The feeding habits, the unique physical appearance of the caterpillars, and the distinctive egg masses distinguish this species.

Unlike the northern tent caterpillar, forest tent caterpillars do not form prominent tent-like silken webs. Large numbers of moths are attracted to lights near infestation areas. Egg bands completely encircle the twigs of host trees through the winter.

Larva: the young larva (caterpillar) is dark with conspicuous hairs and is less than 3 mm (1/8 inch) long. When fully grown the body is dark brown with a prominent row of white keyhole-shaped spots down the center of the back; on either side of the white spots are two fine orange lines; below these is a broad blue band along either side (subdorsal). Rows of fine brown hair are along the subventral area ([Fig](#)). When mature, larvae are 45-55 mm long.

Pupa: brown to black within a yellowish cocoon; about 25 mm long.

Adult: light to dark reddish brown moth, stout-bodied; forewings are banded by darker oblique bands; wingspan is 25-37 mm. They are strong fliers.

Eggs: grey masses covered with a silvery-brown hardened foam-like protective substance in encircling bands 12-25 mm wide on small twigs.

Control

Natural control factors including parasites, predators, disease, starvation and weather conditions have reduced populations in infested trembling aspen stands in B.C. Population collapse occurs after several successive years of defoliation.

Mechanical measures are usually adequate in localized urban situations where egg masses can be clipped off host trees during the winter, and larval colonies can be removed and burned in the spring and summer, obviating the use of chemicals.

In some situations, especially in urban areas and for preservation of special trees, application of an approved insecticide may be warranted. The biological insecticide *Bacillus thuringiensis* var. *kurstaki* (Btk) or one of several registered chemical insecticides could be used. The directions on the label, especially for mixing and for application conditions (weather, safety factors), should be followed carefully. Consult a local specialist in pest management, forestry, or horticulture before applying an insecticide.

References

- Cerezke, H.F. 1991. Forest tent caterpillar. For. Can., Northwest Reg., North. For. Cent., Edmonton, Alberta, For. Leaflet 10 (6-panel brochure).
- Churchill, G.B.; John, H.H.; Duncan, D.P.; Hodson, A.C. 1964. Longterm effect of defoliation of aspen by the forest tent caterpillar. *Ecology* 45:630-633.
- Erickson, R.D.; Loranger, J.F. 1982. History of population fluctuations and infestations of important forest insects in the Prince George Forest Region, 1942-1982. Can. For. Serv., Pac. For. Res. Cent., Victoria, B.C., Unpubl. Rep., pp. 49-51. -- Copies of these reports are available for study at the library of the Pacific Forestry Centre in Victoria, British Columbia.
- Furniss, R.L.; Carolin, V.M. 1980 (Reprint). Western forest insects. U.S. Dept. Agric., Forest Service Misc. Publ. No.1339, pp.186-191.
- Ives, W.G.H.; Wong H.R. 1988. Tree and shrub insects of the prairie provinces. For. Can., Nor. For. Cent. Inf. Rep. NOR-X-292, pp. 146-147.
- Turnquist, R. 1987. Maps of major forest insect infestations, Prince George Forest Region, 1944-1986. Can. For. Serv., Pac. For. Cent., Victoria, B.C., FIDS Rept 87-11, pp. 30-34. -- Copies of these reports are available for study at the library of the Pacific Forestry Centre in Victoria, British Columbia.
- Wood, C.S.; Van Sickle, G.A. 1991. Forest insect and disease conditions, British Columbia and Yukon- 1990. For. Can., Pac. For. Cent., Victoria, B.C., Inf. Rep. BC-X-326. pp. 29-30.
-

Figures

Click on any image to see the full size version.
Press "Back" on your browser to return to this screen.



Figure 239-0044. Forest tent caterpillar defoliation on apple.



Figure 239-0043. Forest tent caterpillar defoliation on alder.



Figure 239-0042. Trembling aspen in July after defoliation by forest tent caterpillar.



Figure 239-0041. Forest tent caterpillar defoliated poplar stand.



Figure 239-0040. Forest tent caterpillar larvae.