

The Whitemarked Tussock Moth

(*Orygia leucostigma* Fitch)

Introduction

The whitemarked tussock moth occurs naturally throughout North America. The first recorded outbreak in the Maritimes was in 1937. Since then localized outbreaks have been recorded almost every year. Tree deformation and mortality (especially in balsam fir) can result from the feeding of a high larval population. With good weather and mild winters, a small population can reach high levels within one to two years. The tussock moth can also be a problem to people allergic to the larvae's body hairs. Contact with the hair can result in an itchy rash. Instances have occurred when only non-susceptible workers could enter an infested stand due to the quantity of hair floating in the air.



Tussock moth larva (—————) actual size

Host

Larvae feed on most hardwood and many softwood species. Although hardwoods represent a valuable resource in Nova Scotia, damage to softwood species presents greater economic concern. The tussock moth larva has been known to damage balsam fir Christmas tree plantations. Forest stands that have been defoliated by other insects; such as spruce budworm or hemlock looper are more susceptible to mortality as a result of additional tussock moth damage.

Damage

Damage from the feeding insects is relevant to two forestry sectors in Nova Scotia: 1) in the Christmas tree industry, tree deformation and unsightly egg masses and cocoons result in unmarketable trees, and 2) repeated years of 90 per cent or more defoliation may cause tree mortality and wood loss. Top kill will occur in trees which have had 75 per cent or more defoliation over two years. Larvae hatch in late June and early July and begin to feed on the leaves or needles. Also, they eat the bark which leads to twig curling or

deformation. The larvae feed until early August and then form cocoons made of silk and body hair. Adults emerge from cocoons in September and lay eggs. Both the egg masses and cocoons are laid on host trees and are an "unwanted extra" on Christmas trees.

Detection

Larvae are usually detected in July and August when they are large and close to maturity. The larvae are easily recognized by their characteristic appearance.

Through the winter, egg masses can be found on trunks and branches of trees in an infested area. Eggs are often laid on the pupa's cocoon as well.

Control

Many factors contribute to the decline of a whitemarked tussock moth population. Internal parasites, diseases and predators occur naturally within the population. For parasites and diseases to influence the population, the number of larvae must be very high. Also predators will usually only eat the larva when they are small (the larvae's body hairs act as a

deterrent to birds). This means that the tree may sustain several years of damage before the natural control begin to take affect.

Small infestations can be controlled by collecting and destroying the egg masses by submersing the them in a jar of vegetable oil and then disposing of the oil and eggs after a couple of days.

Early application of a biological control agent such as *Bacillus thuringiensis* can help reduce the impact of larger infestations on high value stands.



Adult tussock moths. Female - wingless
Male - wingspan 25-30 mm

References:

Martineau, R., 1984, *Insects Harmful to Forest Trees*, Multiscience Publications Limited, Montreal.

Rose, A.H. and O.H. Lindquist, Rev. 1994, *Insects of Spruces Fir, and Hemlock*, Can. For. Serv., Great Lakes Forestry Center., Sault Ste. Marie.

Photo of larva used with permission of Canadian Forest Service. Remaining photos by Jeff Ogden, NSDNR.

For more information :

Integrated Pest Management Section
Nova Scotia Dept. of Natural Resources
P.O. Box 130
Shubenacadie, Nova Scotia
B0N 2H0

Phone: 902-758-2232

Fax: 902-758-3210

IPM - Information Leaflet No. 3
1997



Hardened egg mass on balsam fir twig.



Cocoon on balsam fir twig.

Time of year each stage of the tussock moth can be found.

STAGE	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.
Eggs	—————									—————		
Larva						—————						
Pupa								—				
Adult								—————				