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## DEFOLIATION AND TOP-KILL OF WESTERN HEMLOCK BY WESTERN BLACKHRADED BUDWORM NEAR HOLBERG, VANCOUVER ISLAND

D. Clarke Forest Insect and Disease Survey

Defoliation of western hemlock by western blackheaded budworm, Acleris gloverana, declined to 630 ha in 11 separate patches near Holberg on northern Vancouver Island. This is down from 6770 ha in 1989. As a result of three consecutive years of defoliation, top-kill of immature and mature hemlock was observed at nine widely scattered 13— to 35—ha stands.

Top-kill averaged 1 m on 22% of 206 immature western hemlock examined at two sites near Pegattem Creek south of Holberg, where stands were defoliated in 1988 and 1989. Affected trees have lost several years of height growth and could develop crooked stems or multiple tops. Assessments to further determine growth loss and recovery will be repeated in 1991. Following the 1970-73 infestation on Vancouver Island, there was little top-kill and generally good recovery of second growth trees.

Defoliation in 1991 is forecast to be none or trace in most of the previously defoliated stands near Holberg. This is based on provisional estimates of the number of eggs on foliage collected in October, when less than 20 eggs were found per sample at several sites. This will be confirmed once the eggs have been extracted from the foliage and counted under the microscope.

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