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August 1989

Blackheaded Budworm on Vancouver Island - 1989

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Forest Insect and Disease Survey

Increased blackheaded budworm populations defoliated western hemlock over an estimated 7400 ha on northern Vancouver Island near Holberg (Map). Of over 100 individual areas aerially sketchmapped, 2350 ha were lightly defoliated, 3950 ha were moderate and 1100 ha were severe (Table). While a decrease of 1550 ha was noted in the William Lake, Cape Scott Park area, a substantial increase of 2510 ha near Raft Cove and Winter Harbour and 1620 ha near Holberg, caused an overall increase of 2580 ha in total area defoliated from 1988. For the first time, severe defoliation was evident over 1100 ha, while moderately defoliated areas increased by 1810 ha and lightly defoliated areas decreased by 340 ha.

In the past, mostly semi-mature to mature stands were attacked, however, during ground and aerial surveys completed in cooperation with Western Forest Products Ltd. during August of 1989, it was noted that all age classes of western hemlock are affected. Light to moderate defoliation was also noted on scattered individual Amabilis fir and Sitka spruce. During additional aerial surveys on August 23 in cooperation with MacMillan Bloedel, no defoliation was evident south of Quatsino Sound. The last recorded infestation on Vancouver Island, from 1970-1973, defoliated western hemlock and amabilis fir over 164 000 ha from Jordan River north to Holberg.

In October 1988, egg surveys closely predicted the overall increase and the southern shift of defoliation. Forestry Canada will again conduct egg sampling this fall to predict 1990 populations and defoliation.

During the recent infestations on the Queen Charlotte Islands the hemlock sawfly populations increased as the budworm populations began to decline, causing additional substantial defoliation and subsequent mortality. During larval sampling in July 1989 in the Holberg area, very few sawfly larva were found.

Presently, there is no registered pesticide for use against the blackheaded budworm. Therefore, spray trials with Bacillis thuringiensis (B.t.) were undertaken in a cooperative study between Western Forest Products Ltd., B.C. Ministry of Forests and Forestry Canada. As well, study plots to determine the effects of the budworm defoliation on the growth and mortality of western

hemlock have been established for damage appraisal.

While consecutive years of severe defoliation could result in top-kill and tree mortality, none has been evident to date. Forestry Canada will continue to monitor the infestation.

Area, defoliation intensity and number of infested areas mapped of western blackheaded budworm, as determined from aerial surveys on northern Vancouver Island.

Defoliation intensity	1987		1988		1989	
	Area (ha)	No. of infestations	Area (ha)	No. of infestations	Area (ha)	No. of infestations
Light	5	1	2690	80	2350	100
Moderate	0	0	2140	1	3950	16
Severe	0	0	0	0	1100	8
TOTAL	5	1	4830	81	7400	124

* * * * *

AREAS CURRENTLY DEFOLIATED
 BY THE
 WESTERN BLACKHEADED BUIWORM
 VANCOUVER FOREST REGION
 1989

AREA OF DEFOLIATION
 SEVERE
 MODERATE
 LIGHT

