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Blackheaded Budworm on Vancouver Island in 1989 and Forecast for 1990

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Forest Insect and Disease Survey

Increased blackheaded budworm populations defoliated all age classes of western hemlock over an estimated 7400 ha on northern Vancouver Island near Holberg (Map). Of 100 individual areas aerially sketch mapped, 2350 ha were lightly defoliated, 3950 ha were classed moderate and 1100 ha were severe. While a decrease was noted in the William Lake, Cape Scott Park area totalling 1550 ha, a substantial increase of 2510 ha near Raft Cove and Winter Harbour and 1620 ha near Holberg caused an overall 54% increase 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.

Egg sampling in the Holberg area during October, with assistance from industry personnel, indicates that populations in 1990 will decrease slightly from 1989 levels (Table). The average egg count per 45 cm branch was 15 in 1989 (range 3 to 33) compared with 59 (range 4 to 166) in 1988. The highest counts both years were along NE Main. Defoliation is predicted to be trace at 4 sites, light at 10 and moderate at 2 sites in 1990.

In an analysis of 5 sites, parasitism was extremely variable and only preliminary as rearing is still in progress. Overall parasitism was low, averaging 13% between locations and ranging from 1% to 51% between locations. The majority of parasitism (11%) was due to a single species of the egg-larval parasitoid, Ascogaster sp. Monitoring and further analysis will continue.

Consecutive years of defoliation could result in some tree mortality and top-kill. This will not be fully evident until the infestation subsides. No top kill has been noted to date. Historically blackheaded budworm infestations have declined after 3-5 years of attack, this may still be the case in this situation. Forestry Canada in cooperation with industry will continue to monitor the infestation.

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Egg counts, actual and predicted defoliation in 1988 and 1989, and 1990 forecast for the Western blackheaded budworm on northern Vancouver Island

Map No.	Location	Avg. No. eggs per 45 cm branch		Defoliation		
		1989	1988	Predicted 1989	Actual 1989 *	Predicted 1990
1	William L.	-	4	trace	nil	nil
2	San Joseph Main	-	37	moderate	nil	nil
3	NE 62	1	20	light	light	trace
4	Goodspeed R.	2	34	moderate	moderate	light
5	Ronning Cr.	12	28	moderate	light	light
6	South Main	20	84	severe	light	light
7	NE Main	33	166	severe	moderate	moderate
8	Stranby R.	3	33	moderate	nil	trace
9	San Joseph R.	32	133	severe	moderate	moderate
10	Hathaway Cr.	11	55	moderate	moderate	light
11	Koprino	4	-	-	nil	trace
12	Leeson L.	19	-	-	light	light
13	Goodspeed R. (WFP)	16	-	-	light	light
14	Ronning Cr. (WFP)	14	-	-	light	light
15	NE 62 (WFP)	5	-	-	light	trace
16	S 100	11	-	-	severe	light
17	S Main	13	-	-	moderate	light
18	S100 A	26	-	-	moderate	light
Average		14	59			

* Based on aerial surveys conducted during August 1989.

AREAS CURRENTLY DEFOILIATED
 BY THE
 WESTERN BLACKHEADED BUDWORM
 VANCOUVER FOREST REGION
 1989

AREA OF DEFOILIATION
 SEVERE
 MODERATE
 LIGHT
 SAMPLING
 LOCATION

