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PEST REPORT

Pacific Forestry Centre • 506 West Burnside Rd. • Victoria, B.C. • V8Z 1M5

December, 1987

Western Spruce Budworm in B.C. in 1987 and Forecast for 1988

C.S. Wood
Forest Insect and Disease Survey

An estimated 834 240 ha of mature and immature Douglas-fir were defoliated by the budworm in British Columbia in 1987, the third successive year of expansion.

The major expansion was in the Kamloops Region, where defoliation has been recorded for 21 consecutive years. There was severe defoliation on 22 000 ha, moderate on 177 000 ha, and light on 622 000 ha; up from a total of 408 000 ha in 1986. Near Canim and Mahood lakes in the Cariboo Region defoliation was moderate on 2 920 ha and light on 6 070 ha, up significantly from 180 ha in 1986. Near Pemberton in the Vancouver Region the area of Douglas-fir defoliated by the budworm expanded to moderate on 825 ha and light on 2 025 ha from 1 255 ha in 1986. Infestations declined west of Rock Creek in the Nelson Region to 1 040 ha from 3 680 ha.

Parasitism of early and late instar larvae averaged 20% (range 6-79%), however, this was too small to have a noticeable effect on the population.

The average number of western spruce budworm egg masses per sample at 68 locations in 4 regions indicates mainly severe defoliation in 1987 (Table 1) (Map 2). However, egg masses were less numerous at 26 of 42 locations sampled for two consecutive years. These included Scottie Creek (-98) north of Cache Creek, Mission Dam (-82) west of Lillooet, Birch Island (-84) near Clearwater and at Anarchist Mountain (-84) east of Osoyoos. Egg masses were more numerous than in 1986 at 16 locations, most noticeably near Round Lake (+458) north of Vernon, at Oregon Jack Creek (+280) southwest of Ashcroft, at Big Bar Mountain (+290) west of Clinton and at McKinney Creek (+308) and Phoenix Mountain (+171) near Rock Creek and Greenwood, respectively.

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Table 1. Summary of predicted defoliation of Douglas-fir stands by western spruce budworm by forest region in British Columbia in 1988.

Forest Region	No. of samples	Predicted Defoliation*		
		Light	Mod.	Severe
Cariboo	6	0	2	4
Kamloops	50	3	14	33
Nelson	7	3	0	4
Vancouver	5	2	2	1
Total	68	8	18	42

* 1-50 egg masses/10 m² foliage = light defoliation

51-150 " " = moderate "

151+ " " = severe "

Table 2. Average number of western spruce budworm egg masses per 10 m² of foliage in 1986 and 1987 and predicted defoliation in British Columbia in 1988 by forest region and TSA.

Region, TSA Location	Predicted Defoliation in 1988	No. of egg masses per 10 m ² foliage		
		1987	1986	Percent change

KAMLOOPS REGION

Kamloops TSA

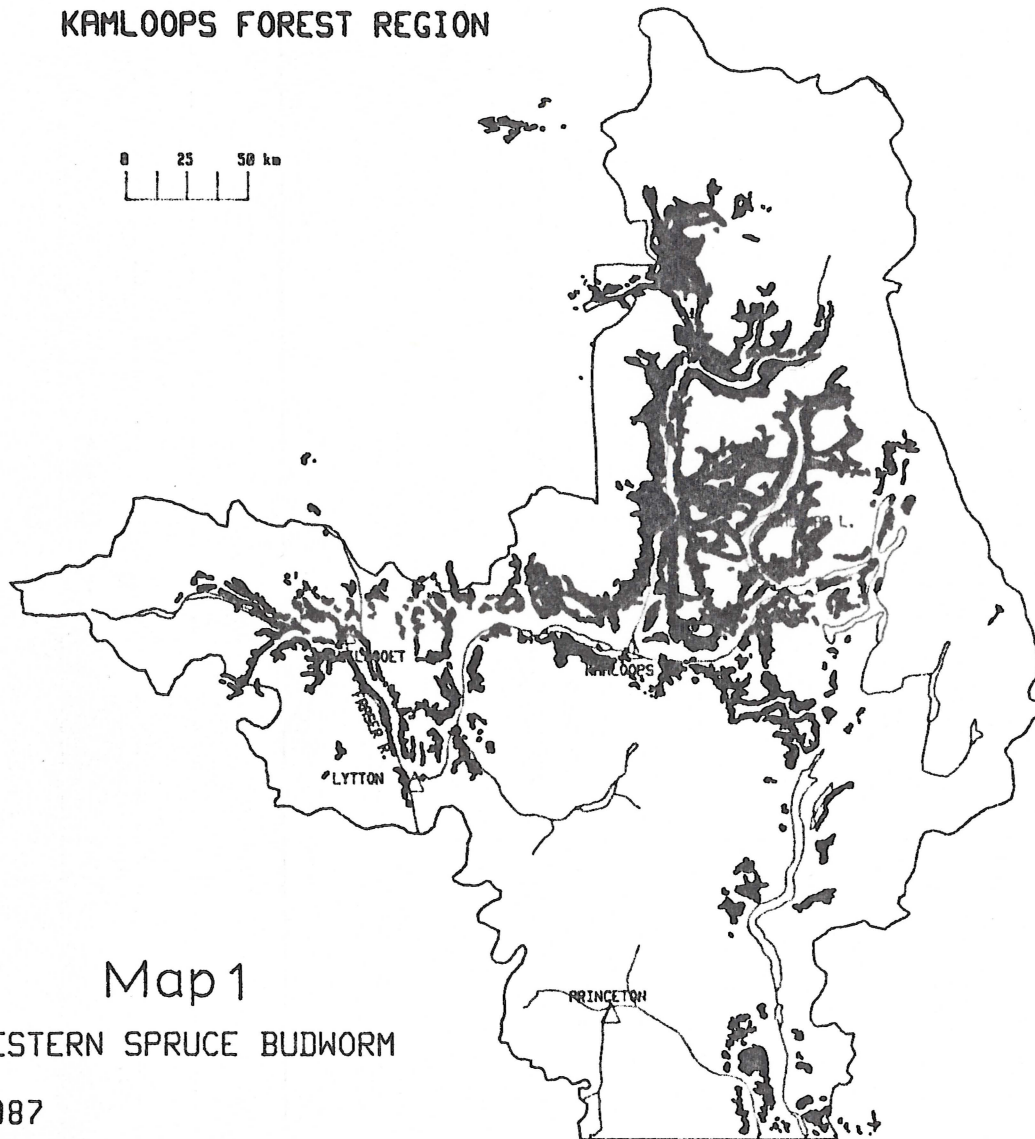
Scottie Cr.	Light	8	351	-98
E. Bonaparte I.R.	Severe	475	776	-39
Cache Cr.	"	212	500	-58
Highland Valley	"	232	260	-11
Oregon Jack Cr.	"	427	112	+280
Sabiston Cr.	"	178	766	-77
Indian Gardens	"	300	173	-73
Beaton L. Rd.	"	247	-	-
Tranquille R.	"	601	345	+74
Kamloops I.R. 1A	"	474	-	-
Kamloops I.R. 2B	"	182	-	-
Paul L.	"	389	425	-8
Heffley L.	Moderate	113	492	-77
Louis Cr.	Severe	190	450	-58
W. of Barriere	Moderate	102	418	-76
E. Barriere L.	"	112	166	-32
Lemieux L.	Severe	237	274	-13
Dixon Ridge	Moderate	77	-	-
Burton Cr.	Severe	233	597	-61
Clearwater	Moderate	129	-	-
Raft R.	"	125	-	-
Birch Island	"	85	518	-84
Avola	Severe	249	-	-
Clearwater L.	Light	38	-	-
Neskainlith I.R.	Severe	294	-	-
Little Shuswap L.	"	428	441	-3
Adams R.	Moderate	121	255	-52

Region, TSA Location	Predicted Defoliation	No. of egg masses per 10 m2 foliage		
	in 1988	1987	1986	Percent change
<u>Okanagan TSA</u>				
Falkland	Severe	295	256	+15
White L.	"	236	509	-54
Round L.	"	363	65	+458
Monte L.	Moderate	119	-	-
Equesis Cr.	Light	35	-	-
Irish Cr.	Moderate	65	-	-
Westbank	"	220	-	-
Spanish L.	Severe	266	-	-
Peachland	Moderate	98	-	-
Mt. Kobau	Severe	275	254	+8
Keremeos Cr.	"	315	-	-
Blind Cr.	"	264	238	+11
Blue L.	"	264	333	-21
Anarchist Mtn.	"	649	300	+116
<u>Merritt TSA</u>				
Pimainus Ridge	Severe	242	276	-12
Soap L.	"	314	-	-
<u>Lillooet TSA</u>				
Marshall Cr.	Moderate	114	83	+38
Mission Pass	Severe	155	880	-82
Cayoosh Cr.	Moderate	98	258	-62
Black Hills Cr.	Severe	269	-	-
Fountain Valley	Moderate	84	322	+74
Izman Cr.	Severe	209	-	-
Murray Cr.	"	229	-	-
VANCOUVER REGION				
<u>Soo TSA</u>				
N. Blackwater Cr.	Moderate	140	106	+32
S. Blackwater Cr.	Severe	156	128	+32
Haylmore Cr.	Moderate	55	46	+20
N. Haylmore Cr.	"	49	-	-
D'Arcy	Light	18	-	-

Region, TSA Location	Predicted Defoliation in 1988	No. of egg masses per 10 m2 foliage		
		1987	1986	Percent change
CARIBOO REGION				
<u>100 Mile House TSA</u>				
Big Bar Mtn.	Moderate	89	-	-
Big Bar L. Rd., Km 99	"	78	20	+290
<u>Quesnel Lake TSA</u>				
Mahood L.	Severe	316	690	-54
Cedar Cr.	"	153	-	-
Viewland Mtn.	"	219	-	-
Jacques L.	"	278	-	-
NELSON REGION				
<u>Boundary TSA</u>				
Anarchist Summit	Light	48	303	-84
Conkle L.	"	32	50	-36
Johnstone Cr.	Severe	558	442	+26
McKinney Cr.	"	159	39	+308
Bridesville	"	536	755	-29
Rock Cr.	"	295	455	-35
Phoenix Mtn.	Light	19	7	+171

KAMLOOPS FOREST REGION

0 25 50 km



Map 1
WESTERN SPRUCE BUDWORM
1987

CANADIAN FORESTRY SERVICE / FOREST INSECT AND DISEASE SURVEY

