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PEST REPORT

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WESTERN SPRUCE BUDWORM IN THE KAMLOOPS, NELSON, AND VANCOUVER FOREST REGIONS

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Forest Insect and Disease Survey

Defoliation of mixed-aged interior Douglas-fir in parts of three forest regions by western spruce budworm, Choristoneura occidentalis, is forecast to be more severe and widespread in 1991. The increases are expected to be most significant in the Okanagan T.S.A. in the Kamloops Forest Region and in the southwestern part of the Boundary TSA in the Nelson Forest Region.

The forecast is based on 46% more 1990 egg masses, and a 22% increase in buds infested with early instar larvae at 32 of 37 stands (Table). Twenty buds from each of five trees were examined at each location in late May and early June. On average, 45% of the buds were infested (range 6-87%). Defoliation is forecast to be severe at 68% of the sites, moderate at 22%, and light at the remainder. This compares to 23%, 54%, and 23% in 1990. Of the 193 000 ha of forest defoliated in 1990, severe defoliation was mapped only over 4000 ha.

Kamloops Region

Defoliation in the Kamloops Region is forecast to exceed the 154 000 ha mapped in 1990 and to be mostly severe. The number of buds infested by young budworm larvae averaged 48% (up 21% from 1990), at 22 of 25 sample sites with severe defoliation forecast at 18 sites. These include sites in the Kamloops TSA near Chase, Pritchard, Paul Lake, and Cherry Creek, and at Fountain Valley in the Lillooet TSA. Severe defoliation is forecast in the Okanagan TSA at Anarchist Mountain, near Osoyoos and Oliver, and along both sides of the valley from Summerland to Falkland and Penticton to near Armstrong. Moderate defoliation is forecast to occur near Mount Kobau, Skimikin, and Salmon Arm in the Okanagan TSA, and at Sabiston Creek west of Kamloops. Light defoliation is forecast at Taylor Lake and Gregoire and Priest creeks in the Okanagan TSA. Mortality of understory trees could occur at Glenrosa, Darke and Taylor lakes, and at Anarchist Mountain, where the only foliage remaining is this year's buds.

Nelson Region

The number of Douglas-fir buds infested by western budworm in lower elevation stands in the Boundary TSA in the southwestern part of the Nelson Region more than doubled in 1991. An average of 47% (range 25-63%) were infested, a 25% increase from 1990 when the area of Douglas-fir defoliated by the budworm totaled 1160 ha. This indicates severe and probably more widespread defoliation in the Johnstone, Myers, Ingram, McKinney, and Nicholson creek drainages, and near Bridesville and Beaverdell. Severe, widespread defoliation was also forecast based on the egg mass samples at the same sites in late 1990. Sampling of buds in higher elevation stands is in progress.

Vancouver Region

The number of infested buds in previously infested stands near Pemberton in the Soo TSA declined 2% overall to an average of 18%. However, populations remain numerous enough to cause moderate defoliation in the Fowl and Tenquille creek drainages, and light defoliation at Blackwater Creek. The forecast is similar to that based on egg mass samples in the general area in late 1990, after mostly light defoliation covered 3825 ha.

Tree mortality, top-kill, bud mortality, increment loss, and tree deformity are likely to result from successive years of severe defoliation. Additional information will be provided following ground, aerial, and egg mass surveys and assessments of natural parasites and disease levels.

Table. Forecast of defoliation of Douglas-fir by western budworm in 1991, based on the numbers of infested buds in three forest regions in May-June 1991.

Region and Location	Percent buds infested	Increase/Decrease*	Defoliation 1/ forecast in 1991
KANLOOPS REGION			
<u>Kamloops TSA</u>			
Sabiston Creek	24	Little change	Moderate
Cherry Creek	47	Increase	Severe
Paul Lake	31	"	"
Martin Mtn.	73	" "	
Pemberton Hill	71	" "	
<u>Lillooet TSA</u>			
Fountain Valley	52	" "	
<u>Okanagan TSA</u>			
Falkland	33	" "	
Skimikin	28	"	Moderate
Equesis Creek	54	"	Severe
Crossman Creek	28	"	Moderate
Mieghen Creek	81	"	Severe
Postill Creek	87	" "	
Lambly Creek	82	" "	
Glenrosa	51	No change	"
Darke Lake	78	Increase	"
Priest Creek	13	"	Light
Peachland Main	75	"	Severe
Chute Creek	58	" "	
Apex Mtn. Road	57	" "	
Taylor Lake	6	"	Light
Blind Creek	49	"	Severe
Gregoire Creek	13	"	Light
Mt. Kobau	19	No change	Moderate
Blue Lake	39	Increase	Severe
Anarchist Mtn.	38	"	"

Region and Location	Percent buds infested	Increase/Decrease*	Defoliation <u>1/</u> forecast in 1991
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NELSON REGIONBoundary TSA

Conkle Lake	30	Increase	Moderate
Johnstone Creek	60	"	Severe
McKinney Creek	47	"	"
Bridesville	44	" "	"
Phoenix Mtn.	25	"	Moderate
Nicholson Creek	63	"	Severe
Ingram Creek	48	"	"
Myers Creek	53	"	"
Beaverdell			

VANCOUVER REGIONSoo TSA

Fowl Creek	24	Decrease	Moderate
Blackwater Creek	7	"	Light
Birkenhead River	22	Increase	Moderate

1/ 1 - 15% of the buds infested = trace to light defoliation
 16 - 30% " " " " = moderate defoliation
 31% + " " " " = severe defoliation

* Little or no change indicated by a change of 5% or less