

Vancouver District



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Forest Insect & Disease Conditions 1973

VANCOUVER DISTRICT

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IMPORTANT NOTICE

Pests and damage at low levels and of minor consequence are not mentioned herein but the data are recorded and preserved in the form of Internal Reports. Such reports and those relative to other B. C. districts are available on request by contacting:

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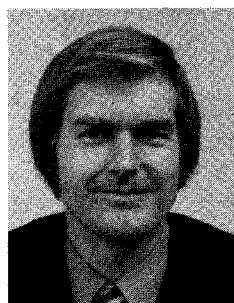
FOREST INSECT AND DISEASE CONDITIONS 1973

VANCOUVER DISTRICT

by



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HIGHLIGHTS

There was a spectacular increase of defoliation by spruce budworm in Douglas-fir stands in the eastern and southern portions of the District during 1973. Blackheaded budworm infestations in western hemlock stands on Vancouver Island declined in extent and intensity. Populations of western hemlock looper at Coquitlam Lake were low and little new damage occurred. The Douglas-fir tussock moth infestation in the Fraser Valley collapsed. Populations of spruce gall aphid were high on the alternate host, Douglas-fir, in much of the Vancouver Forest District. Mountain pine beetles caused increased tree mortality of western white pine in some areas adjacent to the Fraser Canyon.

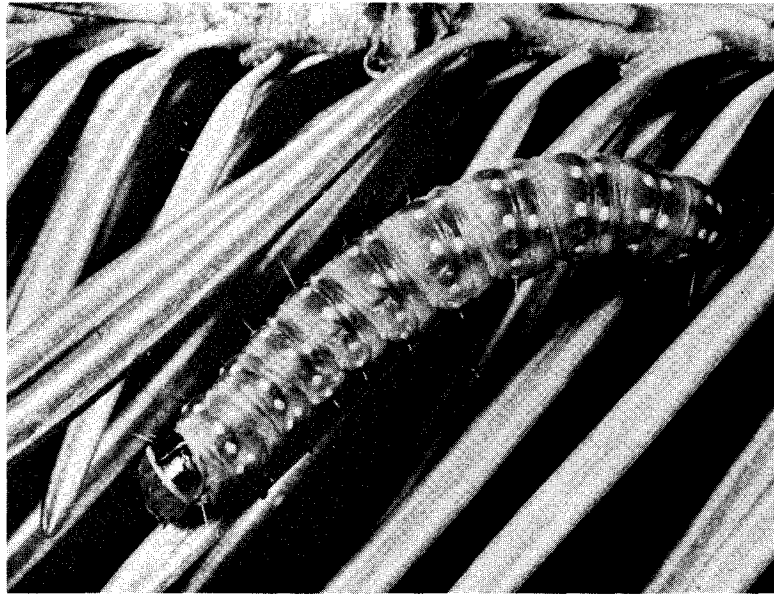
Important forest diseases were generally at a low level in the District in 1973. Leaf blight of western red cedar was very common throughout the District. Light infection of Douglas-fir needle cast occurred on Vancouver Island. Winter injury was moderate to severe on Douglas-fir in parts of Vancouver Island, and on Douglas-fir and lodgepole pine on the Mainland.

SPRUCE

BUDWORM

INFESTATIONS

EXPAND



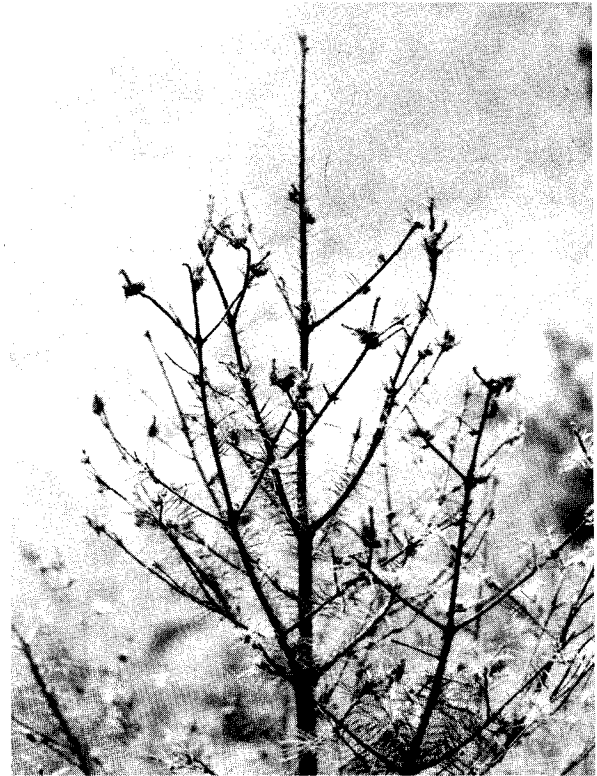
Western spruce budworm infestations in Douglas-fir stands increased from about 55,000 acres in 1972 to 134,000 in 1973. Previously defoliated areas in the Lillooet River Valley, Birkenhead Lake - Blackwater Creek region, Gates River and along the Fraser Canyon and Sumallo River were greatly enlarged and new infestations occurred along the Fraser Canyon and southeast of Hope.

Many budworm larvae fed in the Douglas-fir buds until early in June. Later sampling disclosed that larval populations were comparable to those of 1972 at Gingerbread, Railroad and Haylmore creeks and considerably higher along the Gates River and Blackwater Creek. High populations continued along the Sumallo River and at Spuzzum and Tsileuh creeks. Increased numbers of larvae were found along the Skagit River and were present for the first time in recent years in collections along the east side of Lillooet Lake.

Examinations for larval parasites were made in July. Although there was a slight increase in parasitism at Haylmore Creek, it is not expected to significantly reduce the population. Parasitism in other areas was negligible.

New areas of defoliation were noted during aerial surveys at Eight Mile Creek east of Hope, the western edge of Manning Park, Nahatlatch River and Lake, several areas in the Fraser Canyon on the east side of the Fraser River, and along the East Anderson River. Infestations in the Pemberton area expanded into new areas at the north end of Lillooet Lake, along Green River, and at Meager Creek near the headwaters of Lillooet River. Light defoliation was noted near Boston Bar Creek, a tributary of the Coquihalla River, during ground surveys.

Defoliation of Douglas-fir extended from valley bottoms up to 4,500 feet elevation. The majority of the damage was in the light to moderate category but there were pockets of heavy defoliation (Table 1). The general distribution of damage is shown on Map 1. The heaviest feeding, typical of most defoliators, occurred in the upper crowns, with some understory trees losing 100% of their needle complement. The intensity of damage, as determined from defoliation estimates, was about the same as in 1972; an average of 80% of the current year's growth and 25% of the total needle complement was lost. There has been little tree mortality recorded, but some top-kill is apparent in a number of areas.



Branch samples were taken in August from various points in the District to determine the number of egg masses deposited in 1973 and to predict populations for 1974. Samples were taken at Haylmore Creek, Birkenhead Lake, Gates River, Railroad, Gingerbread and Rutherford creeks and at Sumallo River. The number of egg masses indicated that light to moderate defoliation is likely in most areas in 1974.

Traps were used for the second consecutive year as a means of measuring adult budworm populations. The traps, baited with a sex attractant and coated on the inside with a sticky substance, were set out at six locations on the Mainland and two on Vancouver Island just prior to moth emergence. They were retrieved after completion of moth flight. The average number of moths per trap increased five-fold from the number in 1972, with the greatest increases at Thetis Lake on Vancouver Island and Skagit River on the Mainland. However, the significance of the numbers of moths caught in the traps has not been determined.

The results of the survey indicate that spruce budworm infestations will continue in 1974 and possibly increase in some areas, notably along Lillooet Lake, Coquihalla River and Skagit River.

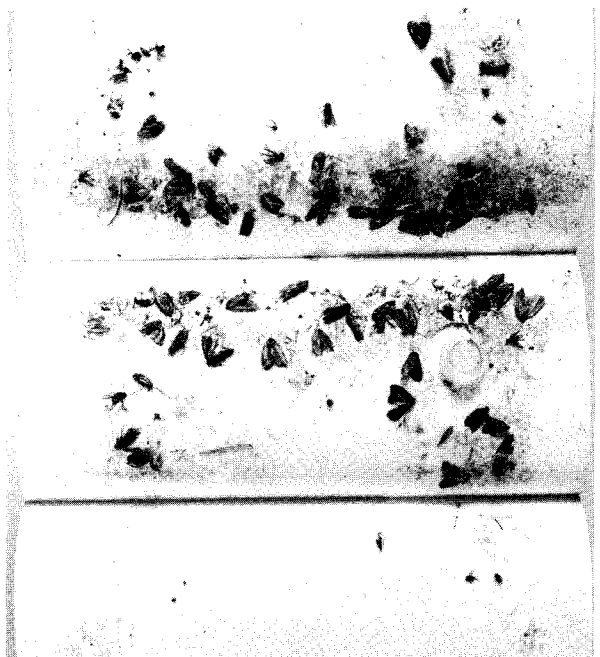


Table 1. Areas of Douglas-fir defoliated by spruce budworm,
Vancouver Forest District

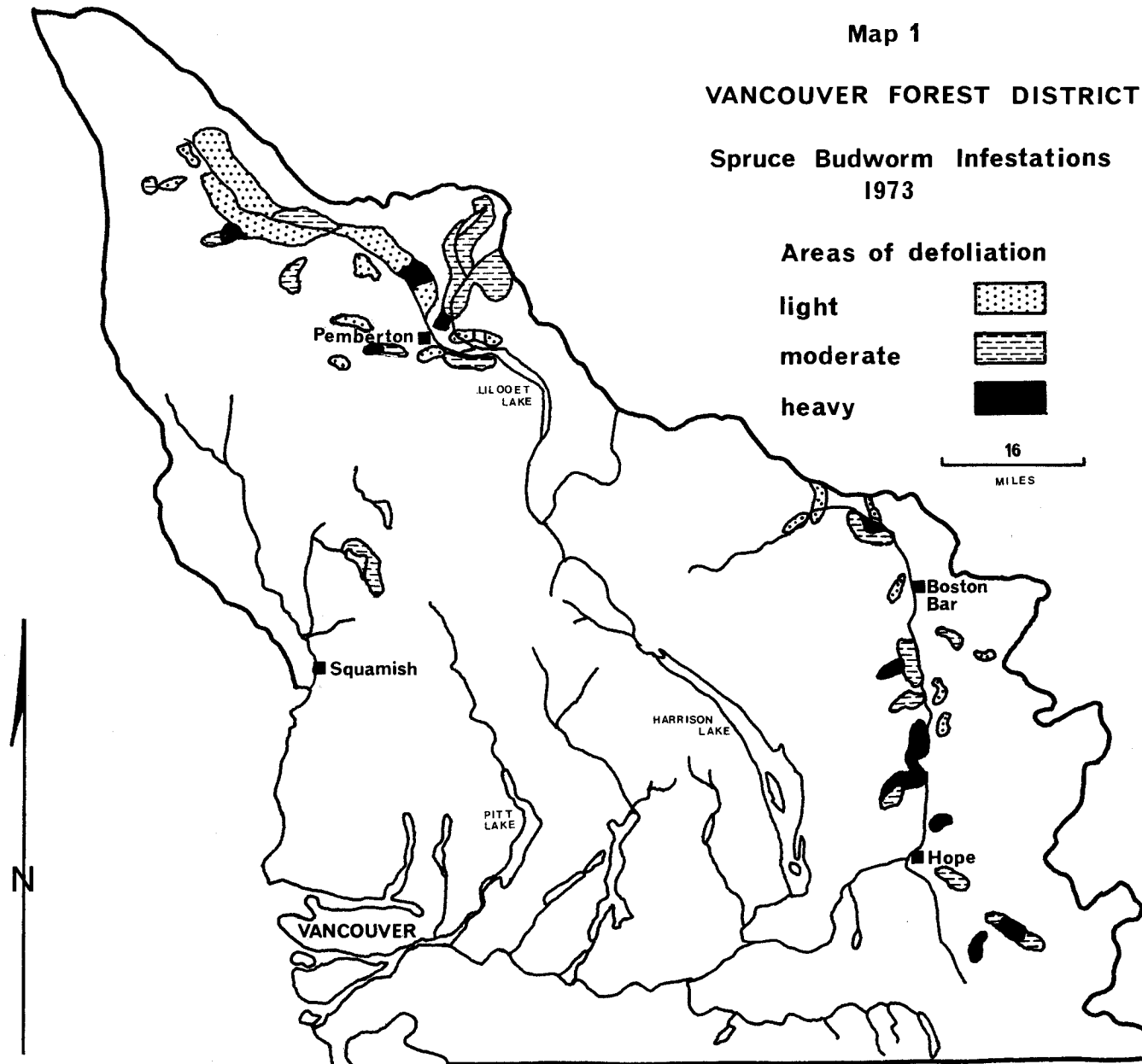
Location	No. acres defoliation			
	light to moderate		heavy	
	1972	1973	1972	1973
Lillooet R (Pemberton to Salal Cr)*	21,600	53,800	100	6,900
Rutherford Cr	2,900	4,000	400	1,000
Soo R	1,300	1,400	0	0
Cheakamus L & R	2,200	2,600	0	0
Birkenhead L - Blackwater Cr	10,800	20,500	100	1,300
Haylmore Cr	4,900	5,400	300	0
Gates R	6,400	10,800	0	2,100
Lillooet L - Green R	0	4,600	0	0
Fraser Canyon (Choate to Boston Bar)	2,200	4,500	300	5,800
Nahatlatch L & R	0	4,000	0	0
East Anderson R	0	1,200	0	0
Eight Mile Cr (east of Hope)	0	300	0	500
Sumallo R	1,300	800	0	2,900
Totals	53,600	113,900	1,200	20,500
Grand totals	1972 - 54,800		1973 - 134,000	

* Host at Salal Cr was alpine fir

Map 1

VANCOUVER FOREST DISTRICT

Spruce Budworm Infestations
1973



BLACKHEADED

BUDWORM

POPULATIONS

DECLINE



Western blackheaded budworm infestations on Vancouver Island declined in 1973 to only 22,600 acres of light defoliation of western hemlock compared to 410,000 acres of light to heavy defoliation in 1972.

There was light feeding in scattered patches from Holberg southeast to Port Alice, at Victoria Lake, Benson Lake and in new areas from Beaver Cove south to Bonanza Lake. Some moderate defoliation occurred at Mahatta River and east of Jeune Landing. Farther south, the population persisted and caused light defoliation in the Pinder Pass area. On southern Vancouver Island, populations were light, as predicted from 1972 egg surveys.

On the Mainland there was light defoliation at Furry and Woodfibre creeks.

Inclement weather early in the season on Vancouver Island resulted in slow larval development. Most larvae in the Neroutsos Inlet - Victoria Lake - Benson Lake region were still very small on July 1 and samples yielded only a third of the number collected in 1972. In mid-July, samples in these areas contained even fewer larvae. In the Nimpkish Valley, larval populations tripled in 1973 but still caused very little damage.

The major cause of the decline of budworm populations on nor-

thern Vancouver Island was probably cool, wet weather during the optimum feeding period. There was little evidence of disease in larvae submitted to the Insect Pathology Research Institute.

A spray program was conducted by the Council of Forest Industries of British Columbia in late June to protect trees from additional defoliation. The insecticide, fenitrothion, was applied to about 28,800 acres of hemlock forest in valleys at the south end of Neroutsos Inlet and in the Benson Lake area. A measure of success in controlling budworm populations was attained.

Branch samples were taken at numerous points on Vancouver Island in October and November to determine the number of overwintering eggs. The samples indicated that budworm populations will be very low in 1974, with perhaps light defoliation in a few areas.

Appraisal plots, established in previous years to study the effects of defoliation, were re-examined in the fall. No tree mortality was recorded but some top-kill was apparent in a few areas. At Jump Creek on south Vancouver Island, 10% of the trees examined sustained from 5 to 20 feet of top-kill. Although no top-kill was noted on the north end of the Island, some may result from severe top stripping of juvenile hemlock east of Jeune Landing and at the south end of Neroutsos Inlet.

WESTERN HEMLOCK LOOPER populations at Coquitlam Lake generally subsided to a low level. Except at one point on the small island in the lake where larvae were numerous, there was no new defoliation.

Moss and duff samples in October produced very few eggs and little defoliation is expected at Coquitlam Lake in 1974.

Elsewhere in the District, hemlock looper populations were low.

THE DOUGLAS-FIR TUSSOCK MOTH infestation on Douglas-fir in the Fraser Valley collapsed in 1973. No new defoliation was observed and many of the trees damaged in the previous two years are recovering from the effects of tussock moth feeding. However, there are a few scattered large trees in the Clearbrook area that have died, and there are others with top-kill.

There was no report of tussock moth on Vancouver Island in 1973.

COOLEY SPRUCE GALL APHID populations on Douglas-fir were unusually high in many parts of the District in 1973. Severe attacks, characterized by an abundance of white, woolly tufts and dark-brown crawlers, occurred in Douglas-fir plantations on Vancouver Island in the Campbell River area, in Nimpkish Valley, Oyster River and between Courtenay and Parksville. At the Koksilah Seed Orchard in Duncan, 95% of the trees were moderately to severely attacked.

On the Mainland, severe infestations were found along the Silver-Skagit Road and the Seymour and Capilano rivers. Reports of damage were also received from Christmas tree growers in the Fraser Valley.

Other than unsightly needle drop, no permanent damage is likely to occur.

MOUNTAIN PINE BEETLES continued to cause mortality of western white pine in many areas of the District. Aerial surveys in 1973 revealed large groups of red-tops at Kookipi Creek, Scuzzy Creek and along the East Anderson River. Smaller groups were scattered along the Lillooet and Cheakamus rivers and near Tenquille and Blackwater creeks (Table 2).

Table 2. Numbers of western white pine trees killed by mountain pine beetles, Vancouver Forest District, 1973

Location	Estimated no. red-tops
Joffre Cr	50
Cheakamus L & R	35
Lillooet R	50
Tenquille Cr	100
Blackwater Cr	125
Rutherford Cr	50
Ryan R	20
Anderson R	300
Scuzzy Cr (south)	500
Scuzzy Cr (north)	200
Kookipi Cr	1,500
Total	2,930

CEDAR LEAF BLIGHT on western red cedar was widespread in the District in 1973. Samples of infected foliage were collected on Vancouver Island at Cowichan River, Ladysmith and in the Campbell River area. In the Johnstone Strait islands, samples were taken at Gilford Island and along Raza Passage. The disease was recorded on the Mainland at Tom Browne Lake, Capilano River and Alouette Lake. Infection occurred on 10 to 100% of the trees examined at each location.

DOUGLAS-FIR NEEDLE CASTS infected Douglas-fir trees in several plantations on Vancouver Island in 1973. Heavy infection by *Rhabdocline pseudotsugae* occurred on 46% of the trees examined at Oyster Bay south of Campbell River. Moderate infection by *R. weirii* was found on several trees at McClure Lake south of Cowichan Lake.

WINTER INJURY was moderate to severe on Douglas-fir in many areas in the Fraser Valley in 1973. Trees in the 40 to 80 foot height range suffered the worst damage, although some small trees in scattered areas were killed. The most severe injury was noted in Clearbrook. Moderate damage occurred between Cultus Lake and Chilliwack, at Harrison Lake and along Highway 401 from Hope to Surrey.

On Vancouver Island, winter injury occurred on reproduction Douglas-fir and western hemlock between Jordan River and Port Renfrew. Foliage damage was noted only on the southerly exposed sides of trees. Conspicuous red flagging of Douglas-fir was common on the Saanich Peninsula.

DROUGHT DAMAGE caused discolored foliage over extensive areas in high-elevation lodgepole pine stands of the Nahatlatch River Valley. No serious damage is expected to result.

CURRENT STATUS OF MAJOR PESTS IN B. C.

PEST	D I S T R I C T S					
	PRINCE GEORGE	PRINCE RUPERT	VANCOUVER	CARIBOO	KAMLOOPS	NELSON
Mountain Pine Beetle	light on Pw Canoe R	epidemic Hazelton area	patchy on Pw Fraser Canyon	light on Pl Cariboo L	outbreaks expanding	epidemics E and W Kootenays
Spruce Beetle	trace Monkman area	trace Stewart area	not found	trace Quesnel L	localized epidemics	light
Douglas-fir Beetle	light Canoe R	not found	trace Pemberton area	expanding Fraser R	light	light
Western Blackheaded Budworm	sporadic increase	new outbreaks	declined	moderate Wingdam	localized outbreaks	trace
Spruce Budworm	epidemic Liard R	light	epidemic Pemberton Fraser Cn	light Hendrix L	epidemic Lillooet area	trace
Douglas-fir Tussock Moth	absent	absent	declined	not found	localized epidemics	not found
Western Hemlock Looper	light	trace	light	not found	localized outbreaks	outbreaks Columbia R
False Hemlock Looper	absent	absent	light	not found	localized epidemics	trace
Black Army Cutworm	localized outbreaks	localized outbreaks	not found	not found	outbreak Blue R	outbreak Golden
Forest Tent Caterpillar	epidemic S & E of Pr. George	light	light	epidemic Quesnel - Horsefly	epidemic Raft R	epidemic Golden - Trail
Larch Casebearer	absent	absent	no host	no host	trace	declined
White Pine Blister Rust	light Canoe R	light	scattered light	light	frequent	common
Dwarf Mistletoe	southern areas on Pl	widespread on Hw, Pl	widespread on Hw	Cariboo - Chilcotin on Pl	Okanagan on F	widespread on Pl, Lw
Drought	not apparent	not apparent	localized	moderate	widespread severe	widespread moderate

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