

# Vancouver District 1974



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# Forest Insect & Disease Conditions

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IMPORTANT NOTICE

Pests and damage at low levels and of minor consequence are not mentioned herein, but the data on these and additional details on the important pests are recorded and preserved in the form of File Reports. Such reports and those relative to other districts in the Pacific Region are available on request by contacting:

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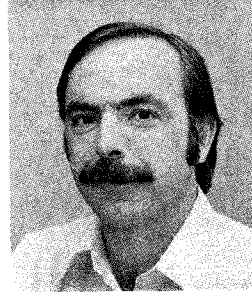
# FOREST INSECT AND DISEASE CONDITIONS 1974

## VANCOUVER DISTRICT

by



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## INTRODUCTION

Western spruce budworm was the major cause of damage in the Vancouver District and defoliation of Douglas-fir stands increased from 1973 levels, mostly in the eastern parts of the District. Blackheaded budworm populations on Vancouver Island declined to low levels and no defoliation of western hemlock was recorded. The balsam woolly aphid was found in Garibaldi Park, extending the known northern boundary of the insect. Douglas-fir beetle attacks, which normally are insignificant on Vancouver Island, occurred on a larger scale in a number of areas. Mountain pine beetles continued to kill western white and lodgepole pine trees, the latter species notably in the Klinaklini River Valley. Poplar-and-willow borers caused extensive damage to shade trees at the Anderson Lake Fisheries Station. Satin moth, normally found in the more southern areas, defoliated black cottonwood trees at Birkenhead Lake. European pine shoot moth persisted at moderate levels in the Vancouver area. Populations of western hemlock looper were low throughout the District.

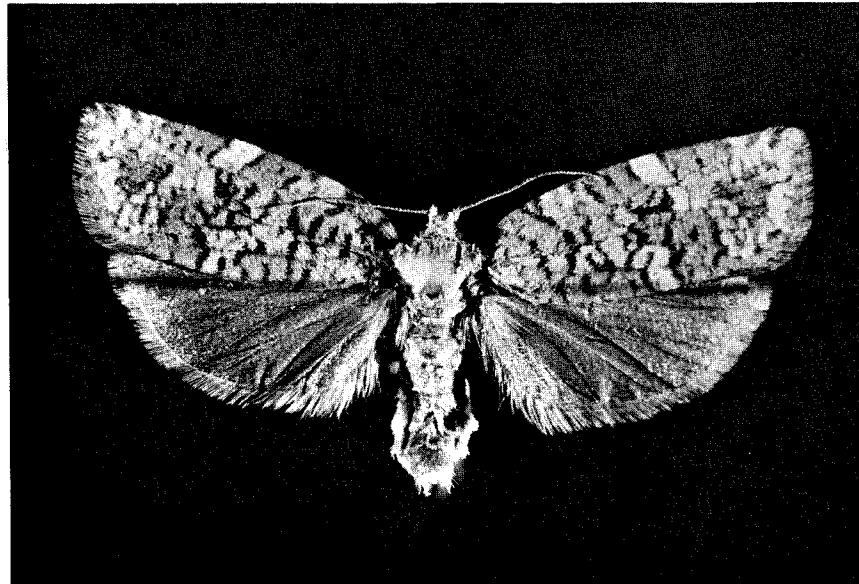
Fungi that cause perennial cankers, decays and root rots produce substantial losses, but their occurrence usually does not fluctuate dramatically; therefore, a yearly account of their status is unnecessary. Injuries from annual diseases (weather conditions, foliage rusts, etc.) were at a low level in 1974. Douglas-fir needle cast was recorded at several locations on Vancouver Island and the Mainland. Berckmann's Blight, a foliage disease, was observed at two locations in the District. A conifer needle rust infected numerous Douglas-fir trees in a plantation at Aldergrove. Winter drying was severe in lodgepole pine stands in the Klinaklini River Valley and extensive damage to deciduous trees by heavy snowfalls occurred in parts of the Fraser Valley during the winter of 1973-74.

SPRUCE

BUDWORM

EPIDEMIC

CONTINUES



Western spruce budworm infestations in Douglas-fir stands increased by about 63,000 acres (25,500 ha) to a total of 194,000 acres (78,540 ha). The major host of the insect was Douglas-fir, but understory western hemlock and amabilis fir trees were severely defoliated in some areas of high larval populations. Stands of amabilis and alpine fir in the Upper Lillooet River Valley suffered extensive defoliation.

Emergence of overwintering larvae was delayed by cool, wet weather in the spring; however, weather conditions in June were favorable and larvae developed normally through the later stages. Moderate to high numbers of larvae were found, in July, in samples at Haylmore Creek, Birkenhead Lake, Railroad, Gingerbread and Rutherford creeks and along the Sumallo River. Populations increased substantially along the Coquihalla and Skagit rivers and, for the first time in recent years, larvae were collected along the southern end of Cheakamus River and in the Harrison Lake area. There was no significant parasitism or disease in larvae dissected in the field or submitted to the Insect Pathology Research Institute.

During aerial reconnaissance in August, new areas of defoliation were mapped along both sides of Lillooet Lake, along Silverhope Creek south of Hope and along the Skagit River into Manning Park. Infestations expanded extensively in the Fraser Canyon but decreased in some parts of the Pemberton area (Table 1). Map 1 shows the general areas of spruce budworm infestations in 1974.

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

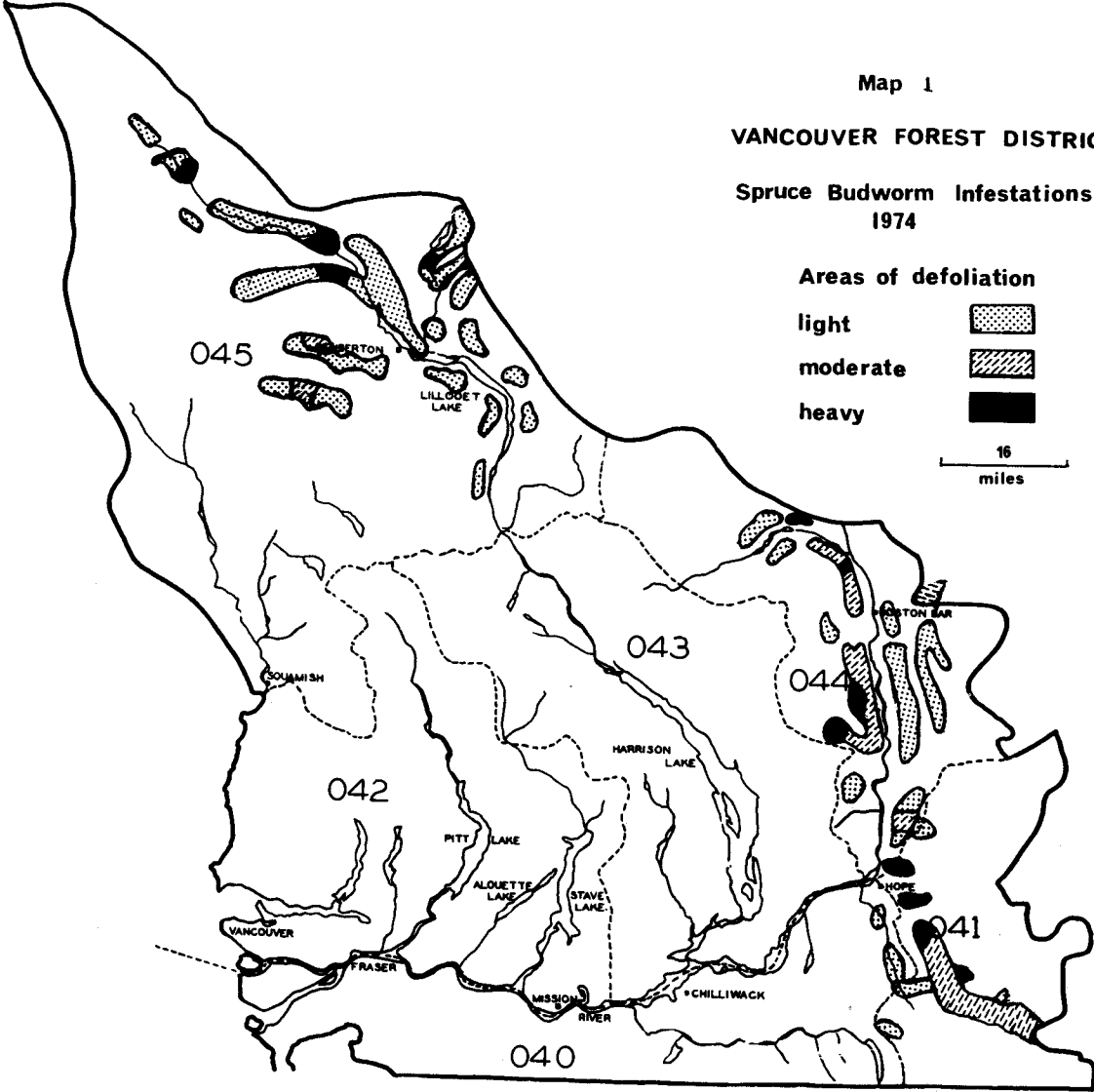
Location	No. acres defoliation	
	1973	1974
Lillooet R <sup>*</sup> (Pemberton to Lillooet Glacier)	60,660	48,320
Rutherford Cr	4,960	4,480
Soo R	1,440	3,680
Cheakamus L	2,560	0
Birkenhead L & R, Blackwater Cr	21,720	22,240
Gates R - Haylmore Cr	18,360	11,200
Lillooet L - Green R	4,640	12,320
Fraser Canyon (Choate to Boston Bar)	10,240	39,840
Nahatlatch L & R	4,000	12,960
East Anderson R	1,280	12,000
Eight Mile Cr (east of Hope)	800	800
Sumallo R	3,680	7,200
Silverhope Cr - Skagit R	0	13,600
Coquihalla R	0	320
Snass R	0	2,880
Skaist Cr	0	1,760
Totals	134,340 (54,390 ha)	193,600 (78,380 ha)

\* Host was alpine and amabilis fir along the upper end of Lillooet River.

Map 1

VANCOUVER FOREST DISTRICT

Spruce Budworm Infestations  
1974



Studies in the Lillooet River Valley showed that heavy defoliation of Douglas-fir by spruce budworm sharply reduced the radial increment, as evinced in the 1944-48 and 1954-58 infestations.

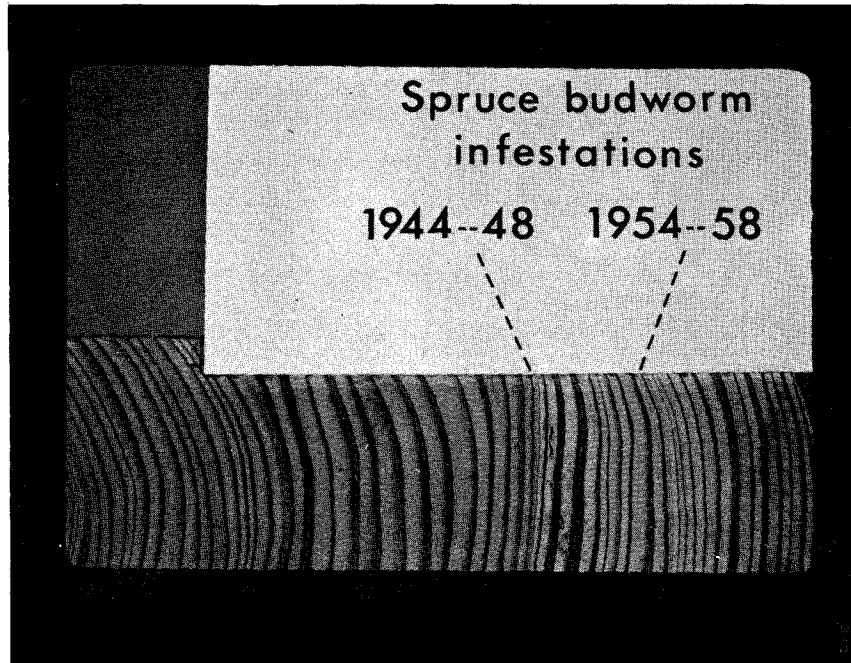
The estimated loss of new foliage on individual trees at 10 points

in the District ranged from a trace to 95%, but only 6% of the trees examined had lost more than 50% of the total needle complement. Top-kill will no doubt occur in some areas, notably at Sumallo River, where complete defoliation of the upper crowns ranged from 1 to 30 feet (9 m) on 78% of the trees examined. A tree mortality rate of 2% has occurred within the current infestation at Railroad Creek in the Lillooet River Valley.

Traps, baited with a sex attractant, were used again at six locations to measure adult male budworm populations. There was an increase in the numbers of adults caught at Spuzzum Creek and Skagit and Sumallo rivers. In the Pemberton and Birkenhead Lake areas, the numbers decreased slightly but still indicated moderate populations.

An egg survey in August showed an increase in the numbers of egg masses at Gingerbread, Rutherford and Haylmore creeks, Birkenhead Lake, Sumallo and Nahatlatch rivers and along the Skagit River. High numbers of egg masses were found in Manning Park.

Indications are that spruce budworm infestations will continue in 1975 in areas where they are established and are likely to spread to regions northeast of Squamish and around Harrison Lake.





WESTERN BLACKHEADED BUDWORM populations in the Vancouver District virtually collapsed. Numbers of larvae in beating collections were generally low and no defoliation was noted in western hemlock stands.

Examination of the 100-tree damage appraisal plots situated in the Neroutsos Inlet area and in the Cowichan Lake - Loss Creek regions on Vancouver Island revealed good recovery from past budworm defoliation. Except for some top-kill that occurred at Jump Creek in 1973, there was no permanent visible damage.

Traps baited with a sex attractant to measure male moth populations indicated that a light to moderate budworm population still exists in the Port Alice area but it is insufficient to pose a threat to hemlock stands in 1975.

BALSAM WOOLLY APHID infestations are now established at least as far northward as Garibaldi Park. Stem attack and some gouted branches were found on a number of amabilis fir trees. Because the damage was relatively light, it was believed that the insect may have been in that area only for the past three or four years. More detailed surveys of true fir stands in the Squamish River Valley are tentatively planned for 1975.

DOUGLAS-FIR BEETLE outbreaks occurred on a small scale in parts of the Vancouver District. On Vancouver Island, beetle attacks were noted on about 80 standing Douglas-fir trees and in felled and wind-thrown trees in MacMillan Park, near Cameron River, at East Saanich Indian Reserve, Stocking Creek near Chemainus, Coombs, Oyster and Heber rivers, and north of Ralph Creek on Buttle Lake.

On the Mainland, an estimated 200 beetle-killed Douglas-fir trees were recorded in the Silverhope Creek - Skagit River Valley south of Hope.

**MOUNTAIN PINE BEETLE** attacks in western white and lodgepole pine stands resulted in additional tree mortality. However, the total number of beetle-killed western white pine trees estimated from aerial surveys in 1974 was less than that recorded in 1973 (Table 2).

An aerial survey indicated that extensive mortality of lodgepole pine had occurred along the Klinaklini River over the past few years. An estimated 10,300 red-topped trees were recorded in groups of 100 to 5,000 from Knot Creek to Klinaklini Lake. The presence of numerous old, dead trees indicated that the infestation had been going on for several years. There were 400 red-topped lodgepole pine trees at Haylmore Creek, northeast of Pemberton.

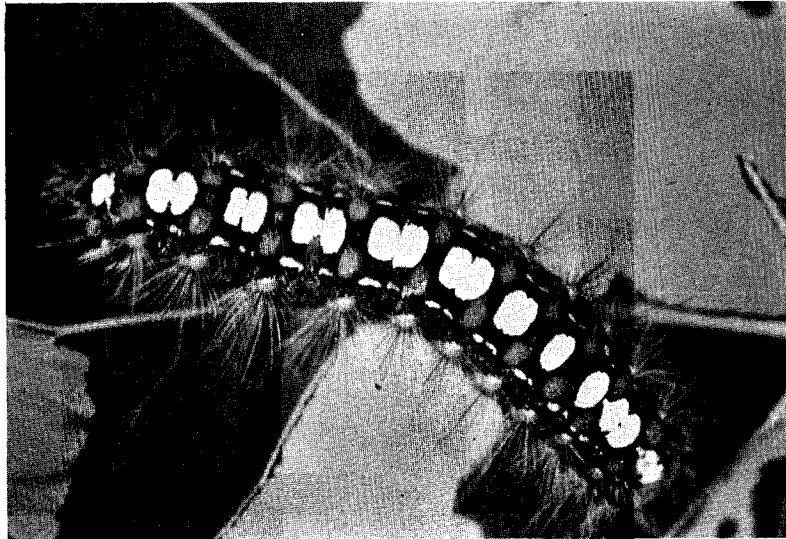
Table 2. Numbers of western white pine trees killed by mountain pine beetles, Vancouver Forest District

Location	No. red-tops	
	1973	1974
Joffre Cr	50	0
Cheakamus L & R	35	20
Lillooet R	50	50
Tenquille Cr*	100	
Birkenhead L - Blackwater Cr	125	300
Rutherford Cr	50	0
Soo R	0	50
Ryan R	20	50
Anderson R	300	320
Scuzzy Cr*	700	
Kookipi Cr	1,500	1,125
Gates L & R	0	40
Totals	2,930	1,955

\* Areas not covered by aerial surveys in 1974.

**POPLAR-AND-WILLOW BORERS** heavily infested more than 700 black cottonwood shade trees along the spawning channels at the Federal Fisheries Station at Anderson Lake. Some of the smaller trees were so badly riddled that they had broken off just above the base. Fisheries personnel planned to interplant native birch, a resistant species, among the surviving cottonwood.

**SATIN MOTH** , an insect pest of native and ornamental poplars, severely defoliated black cottonwood trees on a few acres at Birkenhead Lake. Satin moth adults were collected there in 1973, but no damage occurred at that time. If populations continue to increase in 1975 there could be serious defoliation of shade trees in the new Provincial park at Birkenhead Lake.



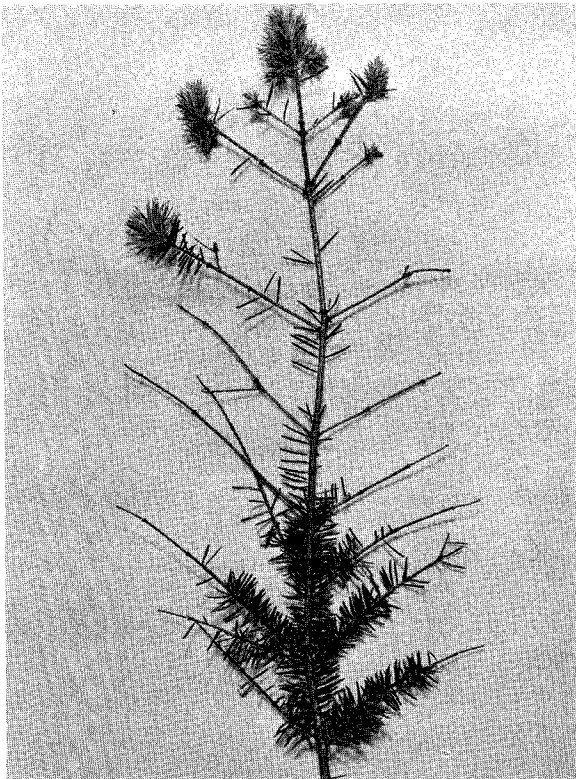
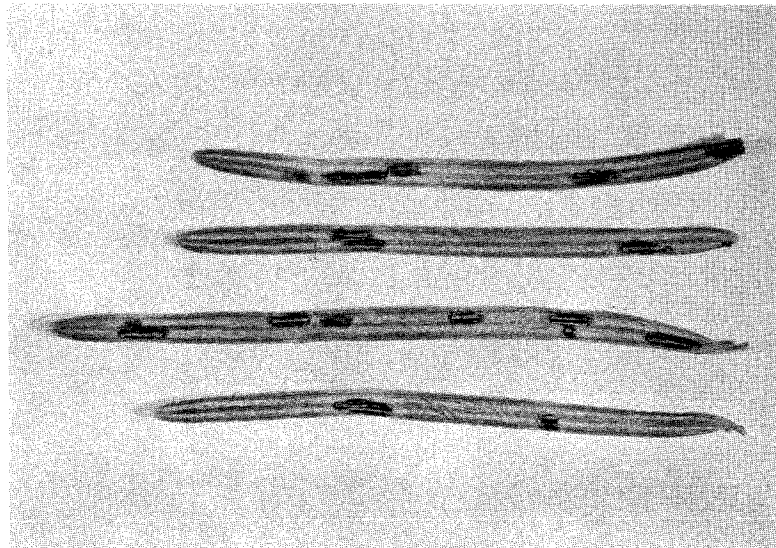
**EUROPEAN PINE SHOOT MOTHS** continued to cause extensive shoot damage in the Vancouver area. Pitch masses, which indicate the occurrence of the insect, were present in mined shoots of planted native lodgepole pine and other ornamental pines at randomly sampled locations.

Traps, baited with a sex attractant, were used at six locations in Vancouver as a tool for assessing populations of male moths. The results showed that there was a moderate to heavy population in some areas of the city.

**WESTERN HEMLOCK LOOPER** populations were at their lowest level in recent years. The infestation at Coquitlam Lake collapsed and only a few larvae were found in the remainder of the District.

DOUGLAS-FIR

NEEDLE CAST



Douglas-fir needle cast occurred in varying intensities in parts of the District. The disease, common to Douglas-fir up to 30 years of age, was heavy in a Christmas-tree plantation near Oyster Bay on Vancouver Island. Lighter infections were present on the Mainland along the Chilliwack River and near Clearbrook.

**BERCKMANN'S BLIGHT** of western red cedar foliage was very common on roadside trees for a mile along Highway No. 1, west of Hope. Affected dead branches were also noted on trees along the Freda Lake road, in the Lois Lake area.

Damage caused by this disease is increasing and has become more noticeable in recent years.

**CONIFER NEEDLE RUST**, *Melampsora occidentalis*, heavily infected the new growth on about 300 Douglas-fir trees in a plantation at Aldergrove. Infected needles die and drop from the tree during the same summer that infection occurs.

**WINTER DRYING** was severe on lodgepole pine trees in the Klinaklini River Valley, occurring over 10,000 acres (4,050 ha) in patches of from 500 (200 ha) to 2,000 acres (800 ha). In some areas, the injured trees were interspersed with trees killed by mountain pine beetles and their weakened condition may predispose them to bark beetle attacks in 1975.

## SNOW DAMAGE

Heavy snow falls in the winter of 1973-74 caused severe bending and breaking of stems in stands of birch, alder and black cottonwood. The most severe damage occurred in the Fraser Canyon between Hope and Yale, where stems were broken off low in the crown. Less sev-



ere damage extended as far west as Abbotsford.

CURRENT STATUS OF FOREST PESTS IN PACIFIC REGION

P E S T	D I S T R I C T S		
	PRINCE RUPERT	PRINCE GEORGE	VANCOUVER
MOUNTAIN PINE BEETLE	epidemic, Houston, Hazelton, Kitwanga	light populations	Klinaklini R, Anderson L and Fraser R
SPRUCE BEETLE	small infestation along Cranberry R	trace at Bowron R and Wendle Cr	not found
DOUGLAS-FIR BEETLE	not found	light at Bear L	scattered light patches on Vancouver Island
WESTERN BLACK- HEADED BUDWORM	epidemic, increased in most areas	moderate increase at Pine Pass and McLeod L	collapsed
SPRUCE BUDWORM, ONE-YEAR-CYCLE	trace at Kitimat	epidemic in Liard R area	epidemic in Lillooet and Fraser valleys
SPRUCE BUDWORM, TWO-YEAR-CYCLE	light popula- tions near Bell-Irving R	light populations	not found
DOUGLAS-FIR TUSOCK MOTH	not found	not found	not found
WESTERN HEMLOCK LOOPER	light in coastal stands	light, decreased	light populations
FALSE HEMLOCK LOOPER	not found	not found	not found
BLACK ARMY CUTWORM	populations in Interior decreased	localized outbreaks	not found
FOREST TENT CATERPILLAR	common near Kitimat	epidemic east of Prince George	localized in a few areas
LARCH CASEBEARER	not found	not found	not found
DWARF MISTLETOE	widespread on Hw and P1	southern areas on P1	widespread on Hw
WINTER DAMAGE	moderate on Sw in Bulkley Va	McBride, east	extensive on P1 at Klinaklini R

D I S T R I C T S			
CARIBOO	KAMLOOPS	NELSON	YUKON
increased on PI at Cariboo L, Riske Cr, Klinaklini R	epidemic in Okanagan Valley	epidemic in E & W Kootenays, 30,000 PI killed	not found
trace at Quesnel L	general collapse	light, few current windfall infested	not found
increased, Fraser R, Meldrum Cr - Dog Cr	light increase in west, scattered occurrence	light, few red-tops recorded in East Kootenay	no host
light population Wingdam	generally light population	increase at Upper Arrow L	trace
Kelly L, light population	epidemic in Lillooet area	increase at Trout L in stands of Hw	trace
epidemic in interior wet belt	moderate defoliation at Lempriere Cr	population collapsed at White R	not found
not found	increased in Kamloops area	trace near Cascade	no host
not found	population increased in North Thompson	collapsed in wet belt forests W Kootenay	not found
not found	outbreaks expanded to 14,000 acres (5,600 ha)	trace near Windermere L	no host
not found	declined, North Thompson	epidemic in Golden area expanded	not found
scattered patches only, Macalister to Quesnel	collapsed in Raft R area	infestation near Golden	not found
no host	light population in Okanagan Va	infestations declined	not found
general on PI in Chilcotin area	severe in localized areas	widespread on PI, Lw	not found
general, 40,000 acres (16,000 ha)	severe in North Thompson Va	Kootenay L from Wynndel to Boswell	light, M.890, Alaska Hwy., Little Salmon L



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