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ANNUAL DISTRICT REPORT
FOREST INSECT AND DISEASE SURVEY
BRITISH COLUMBIA, 1973
PART IV, KAMLOOPS FOREST DISTRICT

by

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PACIFIC FOREST RESEARCH CENTRE
CANADIAN FORESTRY SERVICE
VICTORIA, BRITISH COLUMBIA
INTERNAL REPORT

DEPARTMENT OF THE ENVIRONMENT
January, 1974.

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INTRODUCTION

This report outlines the status of forest insect and disease conditions in the Kamloops Forest District for 1973, and attempts to forecast pest population trends.

Regular field work in the District began May 21 and ended October 2. Special surveys were as follows: European pine shoot moth, May 16 to 18; aerial surveys totalling 14 hours of flying time, from August 20 to 22; and false hemlock looper and Douglas-fir tussock moth egg surveys from September 17 to 28.

A total of 529 insect and disease collections were submitted to the Pacific Forest Research Centre in 1973. Map 1 shows collection localities and drainage divisions.

Numbers of larval defoliators in field collections remained at a high level; 86% of the beating collections contained larvae.

Bark beetles continued to account for most of the tree mortality in the Kamloops Forest District. Spruce beetles attacked large volumes of Engelmann spruce in high-elevation stands in the vicinity of Kelowna. Mountain pine beetle attacks increased in lodgepole pine stands in the Okanagan Valley, but declined in white pine stands in most areas with the major exception of the North Thompson Valley, and remained low throughout the District on ponderosa pine.

Defoliating insects caused more damage in 1973 than in 1972. Spruce budworm infestations on Douglas-fir continued to expand in the Bridge River area. The western false hemlock looper caused moderate to heavy defoliation of Douglas-fir trees at Salmon Arm and Enderby as well as in new areas near Kamloops, Chase and Lavington. Douglas-fir tussock moth infestations greatly increased in size in the North and Central Okanagan Valley. Western hemlock loopers caused moderate damage to western hemlock and western red cedar in the wet-belt areas of the District.

Most of the current disease problems were caused by climatic factors, notably drought damage to all coniferous tree species and winter drying of Douglas-fir and ponderosa pine in the Thompson River Valley.

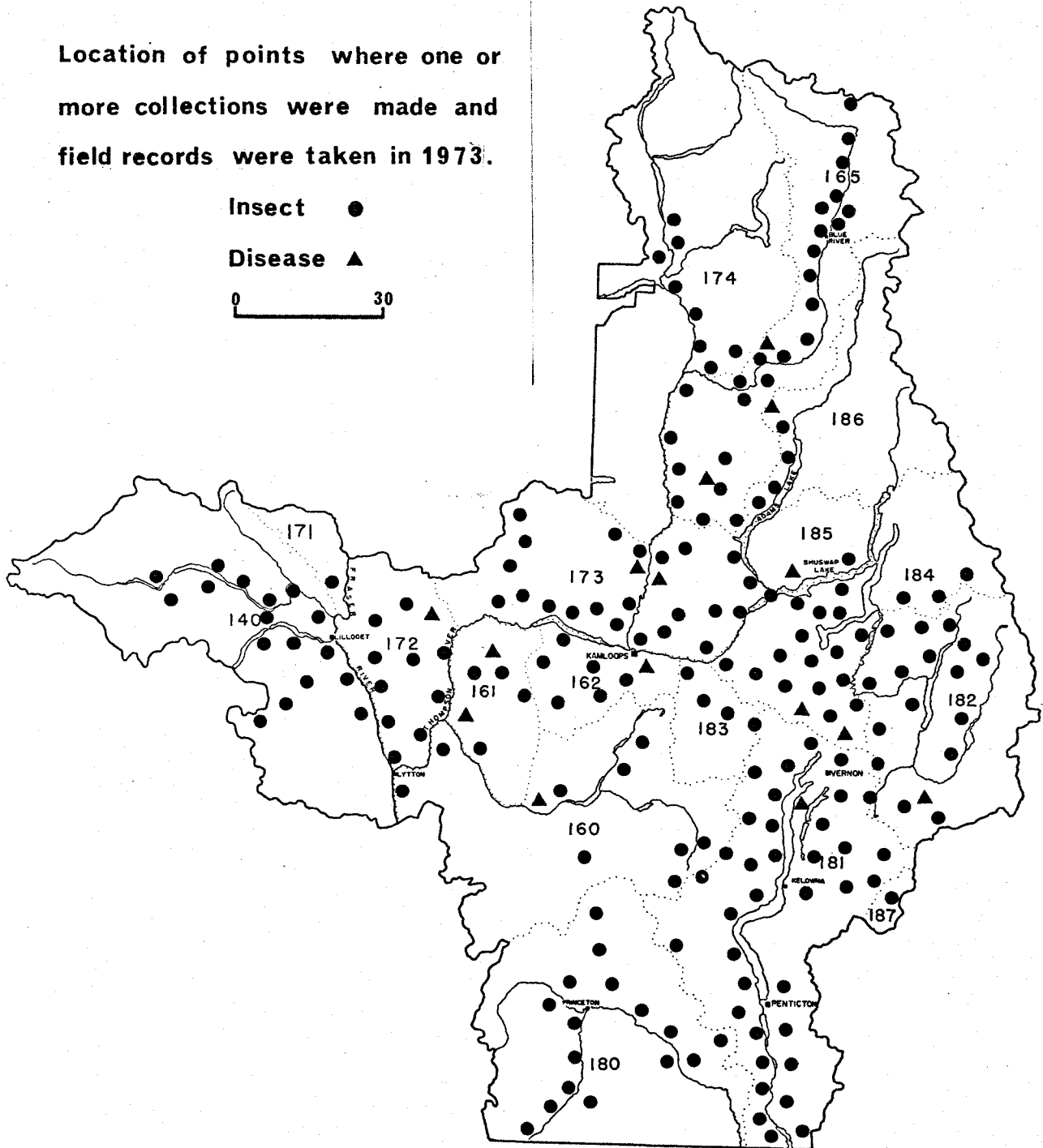
Map 1

KAMLOOPS FOREST DISTRICT

Location of points where one or more collections were made and field records were taken in 1973.

Insect ●

Disease ▲



FOREST INSECT CONDITIONS

Currently Important Insects

Bark Beetles

Spruce beetle, *Dendroctonus rufipennis*

Spruce beetles continue to devastate overmature Engelmann spruce in high-elevation stands in the Okanagan Valley. Infestations on Mt. Gottfriedsen and Whiterocks Mtn are estimated at 1,500 acres each, and on Little White Mtn 300 acres. About 90% of the spruce timber has been killed in these areas. Late in 1973, enough overwintering beetles were found in the Whiterocks Mtn area to effectively destroy the remaining healthy trees above approximately 4,500 feet in elevation. To date, no attacks have been found in younger, more thrifty stands of spruce below the 4,500 foot level. However, this area should be closely watched in 1974 since the severe drought conditions that this area experienced throughout most of 1973 presumably have left the trees more susceptible to beetle attack.

Smaller infestations, totalling 200 acres, have recently developed in one of the few remaining large areas of overmature spruce from Mt. Chapperon to Bouleau Mtn.

Although infestations in the McGillivray Lake area have declined over the past several years, beetles have taken an annual toll of scattered trees in seed blocks.

Mountain pine beetle, *Dendroctonus ponderosae*

Mountain pine beetle attacks in lodgepole pine stands increased in the Okanagan Valley but declined along Cayoosh Creek (Table 1).

Table 1. Number of beetle-killed lodgepole pine trees as determined from aerial surveys, Kamloops Forest District

Location	Year of survey	
	1972	1973
S. fork Whiteman Cr ^{1/}	1,000	2,800
Terrace Cr ^{1/}	1,600	2,000
Mission Cr ^{1/}	250	500
Trout Cr	-	4,000
Cayoosh Cr	1,200	700
Totals	4,050	10,000

^{1/}Plus several thousand trees attacked in 1970-72 and logged in 1972-73.

The number of red-topped lodgepole pine more than doubled from 1972 to 1973 and is expected to increase fourfold in 1974. At Trout Creek, approximately 20 miles west of Summerland, there were 4,000 red-tops in a 500-acre area. However, red-tops represented only 11% of the stand and an additional 50% of the trees were attacked in 1973. At Terrace Creek, on a cruise strip one mile outside of the main infestation area, 4% of the trees were attacked in 1972 and 15% in 1973 as shown below.

Location	No. prism plots	No. trees	% trees attacked in		
			1972	1973	Total
Trout Cr	50	299	11	50	61
Terrace Cr	40	208	4	15	19

Fewer red-topped western white pine trees were noted during aerial surveys in 1973 than in 1972. Infestations expanded in the North Thompson Valley and in Manning Park but declined in the Shuswap River drainage (Table 2).

Table 2. Western white pine trees killed by mountain pine beetle, Kamloops Forest District

Location	Year of survey	
	1972	1973
Avola to Lempriere	2,400	4,500
Larch Hills	1,000	500
Tsuius Cr	1,200	600
Sugar L - Squaw Va	7,050	1,200
Manning Park	2,000	2,500
Totals	13,650	9,300

The number of beetle-killed ponderosa pine remained low. The largest infestation involved about 110 trees near Gun Lake.

Table 3 shows a quantitative three-year comparison of beetle-killed white, lodgepole and ponderosa pine trees.

Table 3. Pine trees killed by mountain pine beetle as determined from aerial surveys, Kamloops Forest District

Pine species	Year of attack	Year of survey	No. trees killed	Est. total vol (ft ³)
Western white	1969-70	1971	9,000	639,000
	1970-71	1972	13,650	969,150
	1971-72	1973	9,300	511,500
Lodgepole	1969-70	1971	3,950	98,750
	1970-71	1972	4,050	101,250
	1971-72	1973	10,000	200,000
Ponderosa	1969-70	1971	460	13,350
	1970-71	1972	360	10,800
	1971-72	1973	140	4,200

Douglas-fir beetle, *Dendroctonus pseudotsugae*

Small numbers of standing, attacked Douglas-fir trees were noted near Carpenter Lake, Brash Creek and in the Monte Hills area. Although Douglas-fir beetle populations have been small for several years, some increase is expected in 1974 as the long, hot summer in 1973 was favorable to brood development and presumably made the trees more susceptible to beetle attacks.

Defoliators

Western spruce budworm, *Choristoneura occidentalis*

Infestations of one-year-cycle spruce budworm in Douglas-fir stands continued in the Anderson, Seton, Carpenter, Gun and Downton lakes area. An estimated 45,000 acres of Douglas-fir trees were defoliated in 1973 (Map 2), a slight increase from 1972. The heaviest defoliation occurred at Mission Pass, at the west end of Carpenter Lake and along the south side of Downton Lake. This is the sixth consecutive year of defoliation in the Bridge River Valley. Some understory trees have been killed and top-kill is evident in overstory trees, especially in Mission Pass.

collections from drainage divisions 181 to 184 follows.

Drainage divisions*	No. samples taken during larval period			% samples containing larvae			Avg no. larvae per positive sample		
	1971	1972	1973	1971	1972	1973	1971	1972	1973
181 - 184	46	41	61	43	42	74	8.2	23.2	62.6
Avg no. larvae for all collections							3.5	9.7	46.3

*See Map 1.

Predictions for 1974 are based on egg counts taken during September from within and beyond known infested stands (Table 6). The criterion adopted is that 25 or more eggs per 18-inch branch sample will result in moderate defoliation and 50 or more eggs will result in heavy defoliation. It would appear that many of the current infestations will continue during 1974 and that defoliation will be apparent in new areas.

Table 5. Western false hemlock looper infestations, Kamloops Forest District, 1973

Location	Acres of defoliated Douglas-fir	Defoliation intensity
Vinsulla	350	Moderate-heavy ^{1/}
Niskonlith L	550	Light-moderate
Chase (south)	200	Light
Little Shuswap L	350	Moderate
	200	Heavy ^{2/}
Turtle Va	75	Moderate
Sunnybrae	100	Heavy
	300	Light
Gleneden	100	Heavy
	1,600	Light-moderate
Canoe	200	Moderate-heavy
Mara L	75	Moderate
Grindrod	100	Moderate-heavy
Enderby	300	Moderate-heavy
Lavington	300	Moderate-heavy
Coldstream	100	Moderate-heavy
Total	4,900	

^{1/}Moderate-heavy = Top-killing and occasional tree mortality may occur.

^{2/}Heavy = Tree mortality may be expected.

Table 6. Western false hemlock looper defoliation and egg density, Kamloops Forest District, 1973, and predicted 1974 defoliation

Location	Defoliation of Douglas-fir 1973	Avg no. eggs per 18-inch branch	Anticipated defoliation 1974
Jamieson Cr	moderate	1	light
Westsyde	moderate	9	light
Paul L	nil	0	nil
McGillivray L Rd.	moderate	42	moderate
Niskonlith L	light	17	light
Chase (west)	light	74	heavy
Chase (south)	light	80	heavy
Little Shuswap L	moderate	41	moderate
Blind Bay	nil	0	nil
Carlin	light ^{1/}	8	light
Sunnybrae, mile 3	heavy	135	heavy
Sunnybrae, mile 4	light ^{1/}	12	light
Sunnybrae, mile 6	nil	8	light
Gleneden	heavy	37	moderate
Canoe	moderate-heavy	19	light
Canoe, McLeod Rd.	light ^{1/}	7	light
Mara L	moderate	4	light
Grindrod	moderate-heavy	54	moderate-heavy
Glenmary	moderate-heavy	42	moderate
Enderby	moderate-heavy	24	light-moderate
Enderby (west)	nil	5	light
Brash Cr	nil	5	light
Whiteman Cr	nil	7	light
Beau Park	nil	10	light
Six Mile Rd.	nil	0	nil
Glenemma	nil	3	light
Lavington	moderate-heavy	70	heavy

^{1/} Sprayed, June 1973, with an insect bacterium, *Bacillus thuringiensis*.

Douglas-fir tussock moth, *Orgyia pseudotsugata*

Severe defoliation of immature Douglas-fir and some ponderosa pine trees occurred over approximately 5,100 acres (Table 7) in 1973 compared with 1,700 in 1972. Damage was confined to the Okanagan Valley with the exception of small outbreaks in mature Douglas-fir near Salmon Arm and Savona (Map 2).

The largest infestations occurred in the Kelowna - Winfield - Oyama areas, comprising some 2,500 acres of which about 1,000 acres of trees were killed. This rapid and extreme tree mortality is thought to have been partly caused by the exceptionally severe drought in 1973.

In the South Okanagan the 1,000-acre infestation at Kilpoola Lake, west of Osoyoos, collapsed during the summer of 1973. As a result of accumulative defoliation, 50 acres of trees were killed and 100 acres of Douglas-fir trees suffered top-kill. New infestations occurred near Okanagan Falls and Penticton of 200 and 100 acres respectively.

By August larval populations, where infestations have persisted for two or three years, were greatly reduced by a nuclear polyhedral virus disease. Although some defoliation may occur in these areas during the early feeding period in 1974, most infestations are expected to collapse during the summer as the virus disease spreads through the tussock moth populations. Small isolated outbreaks, such as east of Vernon, Winfield and Rutland, may persist for another year.

Table 7. Douglas-fir tussock moth infestations, Kamloops Forest District, 1973

Location	No. acres of Douglas-fir defoliated
Savona	5
Salmon Arm	15
Vernon	130
Oyama	750
Winfield	1,000
Glenmore (Kelowna)	1,000
Rutland	150
Okanagan Mission	500
Westbank	150
Summerland	50
Penticton	100
Kaleden	50
Okanagan Falls	200
Osoyoos	1,000
Total	5,100

Western hemlock looper, *Lambdina fiscellaria lugubrosa*

Western hemlock loopers heavily defoliated western hemlock and western red cedar trees in two 300-acre areas along Tsuius Creek. Moderate defoliation occurred on the current year's growth of western hemlock from Avola to Lempriere in the North Thompson Valley and in the Perry River drainage. These areas border a severe outbreak in the Nelson Forest District. Larvae were common in small numbers on Douglas-fir throughout the Kamloops Forest District.

No disease and few parasites were noted in the loopers during the summer; populations are expected to be high in 1974. Following is a three-year comparison of collections containing hemlock looper larvae, indicating an upward trend of the population in the District.

Drainage divisions*	No. samples taken during larval period			% samples containing larvae			Avg no. larvae per positive sample		
	1971	1972	1973	1971	1972	1973	1971	1972	1973
181 - 184	70	65	56	24	45	43	11.5	8.4	14.3
Avg no. larvae for all collections							2.8	3.8	6.2

*See Map 1.

Filament bearer, *Nematocampa filamentaria*

Large numbers of larvae were commonly found in the wet-belt forests of the Kamloops Forest District in association with the western hemlock looper and likely caused some damage to western hemlock and western red cedar. However, where high populations of filament bearers occurred by themselves, such as at Noisy Creek near Mabel Lake, they heavily defoliated understory trees and ground cover plants but caused little damage to overstory trees. A three-year summary of collections from drainage divisions 182 and 184 follows.

Drainage divisions*	No. samples taken during larval period			% samples containing larvae			Avg no. larvae per positive sample		
	1971	1972	1973	1971	1972	1973	1971	1972	1973
182, 184	23	38	26	61	63	42	17.4	20.9	30.6
Avg no. larvae for all collections							10.6	13.2	12.9

*See Map 1.

Larch budmoth, *Zeiraphera improbana*

During May and June, budmoth larvae severely defoliated 1,200 acres of high-elevation mature western larch in the southern part of Silver Star Provincial Park. By mid-August most trees had re-foliated. Past infestations of this insect in the Kamloops Forest District occurred in 1966 but persisted for only a single year.

Western blackheaded budworm, *Acleris gloverana*

For the first time since 1966, blackheaded budworm larvae caused noticeable foliage damage in the Kamloops Forest District. Approximately 100 acres of mature western hemlock trees in the Tsuius Creek Valley were moderately defoliated. Elsewhere in the District larvae were scarce.

Black army cutworm, *Actebia fennica*

The black army cutworm defoliated Engelmann spruce and Douglas-fir seedlings planted near Redsands in the North Thompson Valley. About 200 acres of a logged-over area were burned in the fall of 1971 and planted in the spring of 1973. Severity of the burn eliminated many of the ground cover plants that are normally the food of cutworms so that they were forced to feed on the conifer seedlings.

Scale Insects

Pine needle scales

The foliage of ponderosa pine was heavily infested by the pine needle scale, *Phenacaspis pinifoliae*, in low elevation stands in the central and north Okanagan. Localized outbreaks of the black pine needle scale, *Nuculaspis californica*, occurred on ponderosa pine in the vicinity of Penticton.

Other Noteworthy Insects

Pine butterfly, *Neophasia menapia*

Pine butterfly larvae lightly defoliated mature ponderosa pine on the west side of Okanagan Lake from Peachland to Summerland for the second consecutive year. In 1973, pine trees near Duck Lake and along the north arm of Okanagan Lake were also lightly defoliated. Large numbers of butterflies fluttering around the crowns of trees in July indicated that further defoliation may occur in 1974.

European pine shoot moth, *Rhyacionia buoliana*

Late in May, 880 Scots pine planted on forest sites in the Okanagan Valley were examined for the presence of the shoot moth. Naturally-seeded lodgepole and ponderosa pine trees were checked when they occurred in or around Scots pine plantations. To date no shoot moths have been found in native pines on forest sites, although infested exotic and native pines were found in earlier years in some residential gardens.

Douglas-fir needle midges, *Contarinia* spp.

As in 1972, there were exceptionally severe infestations of this Christmas-tree pest in 1973 on immature Douglas-fir trees from Kelowna to Winfield, and near Okanagan Lake from O'Keefe to Whiteman Creek. The percentage of needles infested declined in most of the annually examined plots (Table 8). Needles were taken from five branch tips from each of five trees at each plot.

Table 8. Percentage of Douglas-fir needles infested by needle midges, Kamloops Forest District

Location	% needles infested	
	1972	1973
Barriere	20	17
Cherry Cr	15	10
Le Jeune L Rd	-	54
Monte Cr	25	13
Falkland	25	42
Coalmont	3	5

Cooley spruce gall aphid, *Adelges cooleyi*

Infestations on Douglas-fir trees generally declined throughout the District, causing only light damage to Christmas trees. The percentages of needles infested at annually examined plots were as follows: Barriere, 9; Cherry Creek, 1; LeJeune Lake Road, 6; Monte Creek, 23; Falkland, 3 and Coalmont, 2. In 1972, infestations ranged from 14 to 61% of the needles.

Table 9. Other insects of current minor significance

Insect	Host(s)	Locality	Remarks
<i>Autographa californica</i> Alfalfa looper	Miscellaneous ground cover	Enderby	Defoliator. An agricultural insect, defoliated roadside chokecherry when its usual food supply was exhausted.
<i>Chrysomela semota</i> a leaf beetle	Miscellaneous deciduous trees	Okanagan Lake Provincial Park	Defoliator. Defoliated a wide range of forest and exotic trees.
<i>Coleophora laricella</i> Larch casebearer	Western larch	Southeastern Okanagan Va	Defoliator. Larval populations remained at a low level, but more numerous than in 1972.
<i>Hyphantria cunea</i> Fall webworm	Chokecherry, miscellaneous trees and shrubs	Okanagan and Thompson Va	Defoliator. Common but less damage than in 1972.
<i>Malacosoma disstria</i> Forest tent caterpillar	Trembling aspen	Mad R	Defoliator. Several thousand acres of moderate to heavy defoliation.
<i>Neodiprion</i> spp. Conifer sawflies	Douglas-fir, western hemlock, lodgepole pine, ponderosa pine, Engelmann spruce	General	Defoliator. Light defoliation of Douglas-fir in localized areas in the Okanagan Valley. Moderate populations on western hemlock, scarce on other hosts.
<i>Pristiphora erichsonii</i> Larch sawfly	Western larch	Vernon	Defoliator. Small pockets of light defoliation, otherwise scarce.

FOREST DISEASE CONDITIONS

The organisms currently causing most of the tree mortality, growth loss, and quality reduction attributed to diseases are dwarf mistletoes and stem and root rot fungi which, once established in a stand, persist for many years. They usually intensify at a slow rate, making annual summaries of their status repetitious; for this reason, the following report may omit some of the more important diseases. Emphasis is placed on new outbreaks, the status of annually varying foliage diseases and abnormal weather conditions, i.e., frosts, drought, snow damage, etc., that immediately affect tree appearance and often cause dieback and mortality. Other aspects of the Disease Survey dealing with mortality, growth loss and factors influencing the occurrence of the more important diseases are summarized elsewhere.

Currently Important Diseases

Stem Diseases

White pine blister rust, *Cronartium ribicola*

This disease is a perennial problem of western white pine in the wet-belt areas of the District. In the North Thompson Valley an estimated 1,700 recently-damaged trees were noted from Avola to Thunder River. Numerous damaged trees were also observed in the Raft River Valley, east of Vavenby, around Adams Lake, along the Upper Shuswap River and in Manning Park.

Foliage Diseases

Elytroderma disease of pines, *Elytroderma deformans*

Signs of increased disease intensity on ponderosa pine appeared in 1973. Five plots, established in 1961, have been examined annually to determine the effect of the disease (Table 10). Root diseases and bark beetle attacks have contributed to tree mortality in the plots.

Table 10. Percentage of ponderosa pine foliage infected by Elytroderma disease, and number of dead trees, Kamloops Forest District

Location	% foliage infected		No. dead trees		Increase in no. of dead trees
	1972	1973	1972	1973	
Lower Hat Cr	15	20	4	4	0
Le Jeune L Rd	40	50	33	33	0
Lower Nicola	30	40	5	9	4
Glenemma	25	45	8	12	4
Carrs	25	50	20	25	5

Physiological Diseases

Drought damage

All coniferous tree species in the southern part of the Kamloops Forest District sustained drought damage as a result of unusually light snow and rainfall coupled with high temperatures during July and August. Many trees that were defoliated by the Douglas-fir tussock moth and western false hemlock looper died after only one year's heavy defoliation, whereas it normally takes two to three years of feeding to cause tree mortality. Large areas of spruce, Douglas-fir and pine trees, regardless of elevation, that have been weakened by drought may be susceptible to bark beetle attack.

Winter drying

For the second consecutive year, ponderosa pine between Spences Bridge and Ashcroft suffered light to moderate damage. Foliage discoloration appeared in a band between 1,500 and 2,500 feet elevation along the east side of the Thompson River. Douglas-fir was lightly affected.

Douglas-fir trees in a localized area along Cherry Creek, west of Kamloops, have been seriously damaged; as a result some tree mortality is imminent.

Light to moderate foliage damage on ponderosa and lodgepole pines, western red cedar and Douglas-fir occurred near Shuswap Lake from Squilax to Celista.

KAMLOOPS DISTRICT

Appendix I

Permanent Sample Stations

There are 147 permanent sample stations in the Kamloops Forest District. From these 147 stations, 279 three-tree beating collections are made. Following is a list of permanent sample stations showing tree species sampled and date of establishment.

Tree species sampled	Year established										Totals
	61	62	63	64	67	68	69	71	72	73	
Douglas-fir	14	19	16	-	4	2	2	47	5	1	110
Ponderosa pine	7	13	10	-	2	-	2	15	-	1	50
Lodgepole pine	2	2	1	-	2	-	2	11	5	-	25
Engelmann spruce	2	6	2	1	2	1	1	11	-	-	26
Western hemlock	2	2	5	-	-	3	12	-	-	-	24
Western red cedar	2	3	5	-	-	2	9	-	-	-	21
Alpine fir	1	2	2	1	-	1	-	5	-	-	12
Western larch	1	2	-	-	-	-	-	6	-	-	9
Rocky Mtn juniper	-	-	1	-	-	-	-	-	-	-	1
Western white pine	1	-	-	-	-	-	-	-	-	-	1
Totals	32	49	42	2	10	9	28	95	10	2	279

Sample station records including descriptions are in the Kamloops District file in room 6 of the Survey building, P.F.R.C.

KAMLOOPS DISTRICT

Appendix II

Tree Damage Appraisal Plots

Pest	Location of plot	Tree species	No. trees	Date established	Purpose
Western false hemlock looper	Mile 4 Sunnybrae Road	Douglas-fir	50	Sept. 1972	Defoliation impact.
	Mile 6 Sunnybrae Road	"	50	Sept. 1972	"
	Gleneden	"	50	Sept. 1973	"
	Canoe	"	50	Sept. 1973	"
	Enderby	"	50	Sept. 1973	"
	Lavington	"	50	Sept. 1973	"
Douglas-fir tussock moth	Winfield	Douglas-fir	50	Aug. 1971	"
	McKinley Landing Road	"	50	Sept. 1972	"
	Okanagan Mission	"	50	Sept. 1973	"
	Vernon Hill (foot)	"	50	Aug. 1973	"
Western spruce budworm	Kwoiek Creek	Douglas-fir	100	1973	"
	Mission Pass	"	100	1973	"
Needle miner <u>Contarinia</u> spp.	Barrier	Douglas-fir	5		Infestation trend
	Cherry Creek	"	5		
	Le Jeune Lake Road	"	5		
	Monte Creek	"	5		
	Falkland	"	5		
	Coalmont	"	5		
	Ashnola	"	5		
	Lumby	"	5		
Heffley Creek	"	5			

Appendix II - Cont'd.

Pest	Location of plot	Tree species	No. trees	Date established	Purpose
<u>Elytroderma deformans</u>	Lower Hat Creek	ponderosa pine	29	1960	Infection trend
	Le Jeune Lake Road		71	1960	"
	Lower Nicola		28	1960	"
	Glenemma Range		60	1960	"
	Carrs		78	1960	"

Plot forms are in the Kamloops District file in room 6 of the Survey building, P.F.R.C.

KAMLOOPS DISTRICT

Appendix III

<u>Title</u>	<u>Author</u>	<u>Date</u>
<u>Pest Reports</u>		
Mortality of Western White Pine in the Vicinity of Blue River, Kamloops Forest District	C.B. Cottrell	1973
Western False Hemlock Looper in the Shuswap and Okanagan Valleys	C.B. Cottrell	1973
Douglas-fir Tussock Moth Infestations in the Okanagan Valley	C.B. Cottrell	1973
<u>Special Reports</u>		
Spruce Beetle Infestations near McGillivray Lake, Kamloops Forest District, 1973	C.B. Cottrell	1973
Condition of Spruce Trees in the Raft River Valley, Kamloops Forest District	C.B. Cottrell	1973
<u>Information Reports</u>		
Forest Insect and Disease Conditions, 1973, Kamloops District	C.B. Cottrell W.R. Adams	December, 1973

KAMLOOPS DISTRICT

Appendix IV

Exotic Plantations

Non-native trees were planted in a burned area in the Kamloops Forest District in 1960. The Forest Insect and Disease Survey assumed the responsibility of inspecting this plantation for evidence of pest introduction or their susceptibility to native pests.

Prior to 1970 all plantations were inspected annually; since then an inspection schedule has been used to insure inspection of all plantations over a 5-year period.

Listed below are all remaining exotic plantations in the Kamloops Forest District.

Exotic plantation records are on file with the Appraisal group of the F.I.D.S. in the Survey building, P.F.R.C.

XP No.	Tree species	Location	Date established	Year last examined	No. trees remaining
184	Arizona fir	McGillivray Lake	May 1960	1973	?