Kenora District, 1969
Reports of Forest Research Technicians

Mason, J.A.

Information Report O-X-133
(Forest Research Laboratory, Ontario Region)

CANADA

OUR FILE NO.
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DEPARTMENT OF FISHERIES AND FORESTRY
CANADIAN FORESTRY SERVICE

MINISTÈRE DES PÊCHES ET DES FORÊTS
LE SERVICE CANADIEN DES FORÊTS

FOREST RESEARCH LABORATORY
BOX 490
SAULT STE MARIE, ONT.

25 May 70

Dear Sir:

This is a composite of 18 individual Information Reports of Forest Insect and Disease Surveys which were issued and mailed several weeks ago to district foresters and other key forestry personnel in the various districts across Ontario. These reports were numbered consecutively as listed under the table of contents beginning with Lindsay District as O-X-115 and continuing to Fort Frances District as O-X-134, with Geraldton and White River combined as O-X-131. The content is confined to the results of field surveys of insect and disease conditions exclusive of those directly associated with aerial spraying operations carried out by the Ontario Department of Lands and Forests in 1969. Brief resumés of these operations as prepared for the Interdepartmental Committee on Forest Spraying operations in November are provided for your information as supplement reports at the back.

Yours very truly,

W. Lloyd Sippell

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W.L. Sippell,
Head, Insect and Disease Survey,
Ontario Region.

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REPORTS OF FOREST RESEARCH TECHNICIANS

Ontario, 1969

FOREWORD

The Forest Insect and Disease Survey Unit carried out their annual damage detection and censusing program in Ontario between May 1 and September 12, 1969. The results are reviewed in detail for the area shown in the title of each specific report. The following is a general summary of the more important insect and disease situations in the Province.

The spruce budworm was the dominant forest insect problem in 1969. In northeastern Ontario, new or enlarged infestations occurred in the forest districts of Chapleau, Kapuskasing, Cochrane, Sudbury, Swastika, and Sault Ste. Marie. In southeastern Ontario heavy infestations persisted in parts of Pembroke, Tweed and Kemptville districts, and in the western part of the Province two small areas of severe defoliation appeared in the Port Arthur District. Jack pine budworm population levels increased sharply; heavy infestations recurred in the Sault Ste. Marie and Pembroke districts and new areas of severe defoliation were recorded in the districts of Sudbury, North Bay, and Parry Sound.

Aerial spraying operations were carried out against the spruce budworm by the Ontario Department of Lands and Forests in the Port Arthur and Fort Frances districts and against the jack pine budworm and white pine weevil in the Sault Ste. Marie District. Jack pine budworm infestations on the Canadian Forces Base (Petawawa) and on the Petawawa Forest Experiment Station were sprayed by the Canadian Forestry Service. Field technicians were heavily involved in the delineation of areas to be treated, in the timing of spray applications, and in the assessment of populations before and after spraying. Separate reports of these operations are in preparation.

Disease surveys emphasized the evaluation of incidence, infection levels and degree of damage by various pathogens on infected stands. Although no extensive changes in the distribution of the Dutch elm disease occurred in 1969, the pathogen caused considerable mortality of elm, particularly in southern Ontario. Two important diseases of poplar were ink spot and Hypoxylon canker. Scleroderris canker of pine continued to be a major problem in pine plantations. Cankers of pines and hardwoods were evaluated in many stands and details on these and other problems are discussed in the following report.

On January 16, 1970 the Unit lost the valuable services of its Chief Field Technician, J.E. MacDonald, who retired after guiding the Survey Field Service in its various programs and in the compilation of annual district reports for the past 25 years.

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The objectives and working principles of the Insect and Disease Survey are currently being thoroughly reviewed and re-evaluated, and it is now clear that fewer technicians will be involved in carrying out surveys of forest insect and disease conditions in Ontario in 1970. Future reports on the details of these surveys will probably cover five regions or sections of the Province.

L. S. MacLeod
Acting Chief Technician

April, 1970.

KENORA DISTRICT

1969

INTRODUCTION

INSECTS

TREE DISEASES

INTRODUCTION

The following report deals with insect and disease conditions in the district in 1969. The jack-pine budworm infestation virtually collapsed. Larch sawfly and the noctuid, Energia decolor population levels increased, while the fall cankerworm outbreak in Dryden continued to cause concern to property owners.

Emphasis in the 1969 disease field season was placed on cankers, foliar diseases and the use of the disease evaluation form in recording the levels of incidence and infection. Gall rust of hard pines, eastern dwarf mistletoe and needle rust of spruce were the principal diseases evaluated. A first record for the district was established when Cronartium comandrae Pk. was found in Mutrie Twp.

The personnel of the Department of Lands and Forests and woods operators are hereby acknowledged for their co-operation during the 1969 field season.

J. A. Mason

Fall Cankerworm, Alsophila pometaria (Harr.)

A heavy infestation of this insect persisted on Manitoba maple, basswood, and elm in Dryden. Defoliation was severe in the western part of the town, ranging up to 90 per cent on some large trees.

Spruce Budworm, Choristoneura fumiferana Clem.

Generally, population levels remained at a low level throughout the district. A small pocket of light infestation near Camp Whiskey Jack in MacNicol Twp. resulted in five per cent defoliation of white spruce. In 1969 three plots were established at widely separated locations to monitor budworm populations (Table 1).

TABLE 1

Summary of Spruce Budworm Larval Counts Taken on Twenty Beating Mat Samples at Three Locations in 1969

Kenora

Location (township)	Tree species	No. of branches sampled	Total no. of larvae per 20 mat sample
Redvers	bF	56	0
Aubrey	bF	49	0
Melick	bF	76	0

Jack-pine Budworm, Choristoneura pinus pinus Free.

The jack-pine budworm infestation which has persisted for the past several years declined sharply in 1969. Severe defoliation was confined to a small area near the Vermilion Bay airport. Low population levels were found throughout the area formerly infested (Table 2). With the exception of an egg mass count of three on jack pine at Vermilion Bay all counts were negative. Trees in sample plots in the district have been evaluated for the past five years to determine the impact of budworm defoliation. Tree, top, and branch mortality, and annual defoliation were recorded (Tables 3, 4).

TABLE 2

Summary of Jack-pine Budworm Larval Counts in Kenora District from 1967 to 1969

Note: Counts were based on the total number of larvae on 15 tray samples from the lower branches of five jack-pine trees at each location

Location (township)	Av. d.b.h. of sample trees in inches	Total no. of larvae		
		1967	1968	1969
Coyle	5	151	112	0
Docker	5	39	180	8
MacNicol	4	51	137	5
Tustin	4	81	176	0
Desmond	6	97	113	0
Mutrie	6	45	111	3
Pellatt	6	63	6	0
Kirkup	8	92	71	0
Sanford	7	17	10	0
Zealand	5	3	8	0

TABLE 3

Summary of Defoliation Caused by Jack-pine Budworm on Jack-pine Trees in Permanent Sample Plots in the Kenora District from 1967 to 1969

Location	Per cent defoliation		
	1967	1968	1969
Mutrie Twp.	60	29	4
Work Twp.	62	12	3
Pelican Twp.	92	6	2
I.R. # 29	36	28	-
Kirkup Twp.	93	14	0
Tustin Twp.	69	16	2
Lawrence Lake	51	22	-

TABLE 4

Summary of Damage Caused by Jack-pine Budworm on Jack-pine Trees in Permanent Sample Plots in the Kenora District

Location	Per cent dead tops	Av. length of dead tops in feet	Per cent tree mortality	Mortality of current branch tips 1968	1969
Pelican Twp.	48.3	5	0	H	L
Tustin Twp.	9	5	0	H	L
Mutrie Twp.	0	0	0	L	L
Kirkup Twp.	40	4	2	H	L
Work Twp.	0	0	2	M	L

A Noctuid, Enargia decolor Wlk.

The insect was found in most trembling aspen stands throughout the district. High population levels were observed in Phillips and Haycock townships, and near Kenrica Road west of Kenora (see photograph).

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

This leaf miner was widely distributed throughout the district, mainly on small trembling aspen trees. High population levels occurred in Redditt, McMeekin and Zealand townships, and moderate populations were observed in Pellatt and Langton townships. Lightly infested trees were observed at several other locations.

Balsam-fir Sawfly, Neodiprion abietis complex

A general decrease in population levels was noted at all sample plots in 1969 (Table 5). Negative counts were recorded in Langton and Zealand townships.

TABLE 5

Summary of Balsam-fir Sawfly Larval Colony Counts on Ten Balsam-fir Trees in the Kenora District from 1968 to 1969

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of colonies per tree (10 tree sample) 1967	1968	1969
Langton	4	1.0	0.0	0.0
Zealand	4	-	0.4	0.0
Devonshire	3	0.7	5.0	0.2
Willingdon	4	3.9	2.5	0.3
Tweedsmuir	4	1.3	1.3	0.5

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

Minor fluctuations in population levels of this sawfly were recorded at sample points in 1969 (Table 6).

TABLE 6

Summary of Red-headed Jack-pine Sawfly Larval Colony Counts in the Kenora District in 1968 and 1969

Note: Counts were based on examination of ten trees at each location.

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of colonies per tree	
		1968	1969
Desmond	3	-	0.9
Aubrey	4	0.0	0.3
Temple	4	0.2	0.2
Tweedsmuir	3	0.3	0.7

White-pine Weevil, Pissodes strobi Peck.

Population levels declined in Zealand, Mutrie, and Wabigoon townships; and remained unchanged in McMeekin Twp. (Table 7). Considerable damage occurred at a new plot near Wade where 17 per cent of the leaders were infested.

TABLE 7

Summary of Leader Damage by the White-pine Weevil in the Kenora District from 1967 to 1969

Note: Counts are based on the examination of 100 trees at each location.

Location	Host	Av. d.b.h. of sample trees in inches	No. of infested leaders		
			1967	1968	1969
Zealand Twp.	wP	1	82	26	7
Mutrie Twp.	jP	1	5	7	5
Wabigoon Twp.	jP	1	5	8	6
McMeekin Twp.	jP	2	4	3	3
Wade	jP	2	-	-	17

Larch Sawfly, Pristiphora erichsonii (Htg.)

Heavy defoliation by this sawfly was common in tamarack stands throughout the district. A small area of moderate defoliation was observed in Melgund Twp., and European larch in Redditt Twp. were lightly infested.

TABLE 8

Other Noteworthy Insects

Insect	Host(s)	Remarks
Cecidomyia reeksi Vock.	jP	Medium infestation in Jaffray Twp. and light in Haycock Twp.
Chrysomela crotchi Brown	tA	Medium infestation in Zealand Twp.
Diprion hercyniae (Htg.)	wS	Collected west of Vermilion Bay for the first time
Epinotia solandriana Linn.	wB	Trace to medium population levels wherever small trembling aspen occurred
Phratora purpurea purpurea Brown	tA	Medium infestation in Zealand Twp.
Phyllocnistis populiella Cham.	tA	Medium infestation in Pellett Twp.
Pikonema alaskensis (Roh.)	wS	Collected on beating trays throughout the district
Pleuroneura borealis Felt.	bF	Medium infestation at Trap Lake
Sciaphila duplex Wlshm.	tA	Light infestation in Melgund Twp., trace near Camp Robinson
Tetralopha expandens Wlk.	Bur oak	One small area of light infestation in Pellatt Twp.

Eastern Dwarf Mistletoe, Arceuthobium pusillum Pk.

Brooms caused by this flowering plant were found in most stands of black spruce examined. Evaluations revealed heavy infections with 50, 57, and 61 per cent incidence near Gordon Lake and in Jaffray, and McMeekin townships respectively.

Needle Rust of Spruce, Chrysomyxa sp.

An increase in the incidence of Chrysomyxa sp. was noted wherever black spruce was present in the district. Heavy levels of infection were recorded at Stewart and Willard lakes, and a moderate level of infection occurred along Highway 601, five miles north of Highway 17 (Table 9). Light infections were observed in Zealand, Mutrie, Melick, and Van Horne townships.

TABLE 9

Summary of Incidence and Levels of Infection of Needle Rust on Black Spruce in the Kenora District in 1969

Note: Counts were based on examination of four trees from each of ten plots at each location.

Location	Tree height in feet	Level of incidence	Level of infection
Zealand Twp.	25-30	H	L
Melick Twp.	20-30	H	L
Stewart Lake	5-30	H	H
Van Horne Twp.	20-30	H	L
Mutrie Twp.	20-30	H	L
Hwy. #601, 5 miles north of Hwy. #17	30	H	M
Willard Lake	15-35	H	H

Gall Rust of Hard Pines, Endocronartium harknessii (J.P. Moore) Y. Hiratsuka

This gall forming pathogen was noted throughout the district. Jack pine up to 25 feet in height was most severely affected. Disease evaluations performed in Aubrey Twp. and in an area near the village of Amesdale showed heavy levels of infection while moderate levels were detected in the area south of Eagle River.

TABLE 10

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Ciborinia whetzelii (Seaver) Seaver	tA	One evaluation, recorded as light in Wainwright Twp.
Chrysomyxa arctostaphyli Diet.	bS	One broom found in Dryden Nursery
Coleosporium asterum (Diet.) Syd.	jP	In Britton Twp., ten trees examined, seven - trace, two - light, one - moderate
Cronartium coleosporioides complex Arth.	Cow Wheat	Collected in Dryden Nursery
Cronartium comandrae Pk.	jP	An evaluation in Mutrie Twp. was heavy
Cronartium ribicola J. C. Fischer	wP	Moderate evaluation near Nestor Falls
Melampsorella caryophyllacearum Schroet.	bF	Two brooms on one tree in Redvers Twp., seven brooms on ten trees in Temple Twp.
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	Trace level throughout the district
Rhizina undulata Fr. ex Fr.	Ground	Near MacIntosh for the second year