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Kapuskasing District, 1969
Reports of Forest Research Technicians

Baker, J.A.

Information Report O-X-128
(Forest Research Laboratory, Ontario Region)



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 499
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-M-115 and continuing to Fort Frances District as O-M-134, with Geraldton and White River combined as O-M-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.L. Sippell,
Head, Insect and Disease Survey,
Ontario Region.

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 Ontario, 1969

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Regional Supervisors *

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.

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.

KAPUSKASING DISTRICT

1969

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INTRODUCTION

This report deals with insect and tree disease conditions in the Kapuskasing District in 1969.

Infestations of the spruce budworm recurred in the southern part of the district. There was an increase in the severity of defoliation but boundaries were little changed from 1968. New balsam fir and white spruce plots were established in stands which are potential centres for spruce budworm population buildups.

Populations of the leaf miner, Profenusa thomsoni (Konow) on white birch and Lithocolletis salicifoliella Cham. on aspen increased from 1968 levels.

Linospora tetraspora G.E. Thompson, a leaf blight of balsam poplar was not as prevalent in 1969. Infections of the ink spot of aspen, Ciborinia whetzellii (Seaver) Seaver were more severe.

Light to severe wind damage occurred in Divisions 75 and 47 and stands of white spruce, black spruce, jack pine, balsam fir, and trembling aspen were severely damaged.

I would like to express my appreciation for the help given me in 1969 by personnel of woods operators and the Ontario Department of Lands and Forests.

J. A. Baker

Birch Skeletonizer, Bucculatrix canadensisella Cham.

Population levels of this insect have remained approximately the same since 1967. Quantitative counts were high in Rogers Township and low in McMillan, O'Brien, Gill, Wicksteed, Stoddart, and Seaton townships (Table 1). A heavy infestation was observed in Nassau Township on roadside trees.

TABLE 1

Summary of Quantitative Counts of the Birch Skeletonizer
in the Kapuskasing District in 1968 and 1969

Note: Based on the examination of 100 randomly selected leaves taken from three white birch trees at each location.

Location (township)	Av. height of sample trees in feet	Per cent of leaves infested	
		1968	1969
Rogers	35	--	92
Gill	15	12	10
O'Brien	15	25	9
McMillan	15	1	7
Seaton	15	1	4
Stoddart	30	1	3
Wicksteed	45	1	3

Spruce Budworm, Choristoneura fumiferana (Clem.)

Because the current budworm outbreak is spread over a number of districts which cannot realistically be treated separately, a broader approach has been adopted. The following account was extracted from Information Report O-X-135 titled "The Current Spruce Budworm Situation in Northeastern Ontario", to which the reader is referred for additional information.

In 1968, aerial and ground reconnaissance revealed major increases in the intensity and extent of the Borden Township infestation and a number of new infestations were detected over a large part of northeastern Ontario. The Borden infestation northeast of Chapleau had increased to medium intensity and extended over approximately 300 square miles. New infestations extended over approximately 800 square miles in the northern parts of the Chapleau District and into the Kapuskasing District. Both first and second year infestations were largely of light or moderate intensity with pockets of severe defoliation in Borden, Conking, Ivanhoe, and Amundsen townships. New or enlarged infestations were also delineated in the Cochrane, Sudbury, Swastika, and Sault Ste. Marie districts. Elsewhere in northeastern Ontario, infestations

were generally light, interspersed with small pockets of medium to heavy intensity, the most important of which were in Baden Township and Indian Reserve 72 in the Swastika District, in Fairbank Township in the Sudbury District, and in Parkinson Township in the Sault Ste. Marie District.

In 1969, a further major development was evident. In the Chapleau District and the southern part of the Kapuskasing District, medium and heavy infestation extended over more than 2,000 square miles (see map). Stands within this area have obviously been changing from mixed woods, with a dense hardwood overstory that overtopped the fir at the time of the last outbreak, to a predominantly spruce-fir forest with scattered mature white spruce in the overstory and a dense semi-mature balsam fir understory. In some stands the defoliation of balsam fir was particularly severe with upwards of 75 per cent of the old foliage removed in addition to all of the new needles. In the Sudbury District, a new medium to heavy infestation comprising approximately 400 square miles occurred in the area between Onaping Lake and the Canadian National Railway. Also, the light infestation of 1968 in Emerald and Gouin townships increased to heavy intensity, and two widely-separated heavy infestations, in Fairbank and Asquith townships, expanded. Eight additional, but smaller and widely-separated infestations, ranging in size from 1 to 35 square miles, were observed in the district. In the Swastika District, an infestation in Yarrow Township enlarged and increased from medium to heavy intensity, and a new heavy infestation was found in Milner Township. Reductions in the extent of damage in the Cochrane District and the northern part of the Swastika District in 1969 compared with 1968 resulted from a severe frost in mid-June of 1968 that killed most of the new shoots of balsam fir, thus eliminating the food supply for the budworm. In Parkinson Township, Sault Ste. Marie District, a small, heavy infestation on white spruce recurred in 1969.

In order to forecast damage in 1970, egg mass counts were made at a large number of points in and around the infested area. The results of this survey are shown in Table 2.

Moderate and severe defoliation can be expected again in 1970 providing, of course, that normal conditions prevail next spring. A major extension of moderate and light defoliation is expected southward and southwestward of the largest infestation in the Chapleau District and probably beyond the points at which samples were taken. Similar extensions are forecast around Horwood Lake and Foleyet in the eastern part of the Chapleau District and again to the east and south of the large Onaping Lake infestation in Sudbury District. A sufficient number of nil returns were obtained from areas north and west of the infestations in the Kapuskasing District to suggest a static situation in this area for 1970.

Because this outbreak was widespread and the weather at the time of moth flight (July 15 to 28 at Chapleau) was bright, dry, and conducive to moth dispersal, new infestations will probably extend in 1970 beyond the 1969 borders of infestation.

TABLE 2

Spruce Budworm

Summary of Balsam Fir Defoliation Estimates and Egg Mass Counts in 1969,
and Infestation Forecasts for 1970 in Northeastern Ontario

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
<u>Chapleau</u>			
Abigo	3	0	O *
Borden	60	68	M
Brutus	0	0	O
Calais (Prov. Park)	66	633	S
Carty	11	10	L
Conking	8	47	M
Coppell	4	22	L
Denyes	2	40	M
Foleyet	16	56	M
Halcrow	0	0	O
Halsey	3	48	M
Hardiman	8	68	M
Hill	5	84	M
Horwood	12	64	M
Ivanhoe (Prov. Park)	60	309	S
Kapuskasung	71	860	S
Keith	32	89	M
Kirkwall	65	244	S
Lerwick	74	335	S
Lincoln	52	235	S
Makawa	1	0	O
Montcalm	6	20	L
Muskego	3	0	O
Ossin	33	185	S
Oswald	1	0	O
Penhorwood	2	12	L
Rollo	1	12	L
Saddler	3	83	M
Shenango	91	4008	S
11 D (Prov. Park)	2	7	L
11 H	1	6	L
12 F	1	0	O
12 G	1	13	L
12 H	1	42	M
13 G	3	54	M
29	2	8	L
32	1	60	M
35	3	5	L

* S - Severe; M - Moderate; L - Light; O - Nil or very light.

TABLE 2 (continued)

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
<u>Cochrane</u>			
Hassard	8	16	L *
<u>Kapuskasing</u>			
Champlain	63	107	M-S
Clouston	3	0	O
Lisgar	7	76	M
Mons	71	160	S
Puskuta	3	0	O
Radisson	1	0	O
<u>North Bay</u>			
Badgerow	1	10	L
Dunnet	31	151	S
<u>Sault Ste. Marie</u>			
Parkinson (white spruce)	83	677	S
<u>Sudbury</u>			
B	35	476	S
Baynes	2	0	O
Beresford	1	0	O
Beulah	37	363	S
Botha	6	81	M
D	3	6	L
Dale	6	9	L
Dunbar	18	36	M
Edinburgh	1	0	O
Emerald	14	37	M
Emo	55	547	S
Fairbank	64	191	S
Halliday	2	3	L
Hess	2	12	L
Howey	8	31	M
Inverness	6	14	L
Leask	5	9	L
MacMurchy	3	9	L
McCowan	1	9	L
Miramichi	64	822	S
Moher	50	466	S

* S - Severe; M - Moderate; L - Light; O - Nil or very light.

TABLE 2 (continued)

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
Sudbury (cont'd.)			
Moncrieff	16	14	L *
Muldrew	2	0	O
Northrup	4	0	O
St. Louis	3	0	O
Shelly	51	475	S
Starlak	1	3	L
Tyrone	2	4	L
<u>Swastika</u>			
Milner	67	324	S
Tyrell	1	0	O
Yarrow	66	273	S

* S - Severe; M - Moderate; L - Light; O - Nil or very light.

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

Increase in population levels of this insect occurred at many locations in 1969, particularly in the western part of the district.

Quantitative counts in Clavet and Wicksteed townships showed medium and light infestations, respectively. Light infestations were observed in Rogers, Elgie, Larkin, Arnott, and McMillan townships.

Yellow-headed Spruce Sawfly, Pikonema alaskensis Roh.

Population levels of this insect decreased for the second consecutive year. Heavy defoliation was observed on open-grown trees in Wicksteed and McMillan townships and light defoliation occurred in Rogers and Kipling townships.

Amber-marked Birch Leaf Miner, Profenusa thomsoni Konow

This insect increased in abundance in 1969. Light to heavy infestations occurred in white birch stands of all age classes in most parts of the district.

Three small areas of heavy infestation were mapped in Gill and Casselman townships and small pockets of heavy infestation occurred in Stoddart, Way, Casgrain, Frost, Shetland, Fauquier, O'Brien, Howells, and Harmon townships. Medium infestations occurred in McMillan, Fauquier, and Mowbray townships. Light infestations occurred in Cholette, Breckenridge, Gill, Rogers, Fushimi, and Seaton townships.

TABLE 3

Summary of Damage by the Amber-marked Birch Leaf Miner
in the Kapuskasing District from 1967 to 1969

Note: Based on the examination of 100 white birch leaves taken
at random from three trees at each location.

Location (township)	Per cent of leaves mined		
	1967	1968	1969
Frost	48	92	100
McMillan	--	--	100
Fauquier	65	74	33
Seaton	--	2	5
Stringer	4	0	1

TABLE 4

Other Noteworthy Insects

Insect	Host(s)	Remarks
<i>Pissodes strobi</i> Peck	wP	Light infestation in a black spruce plantation in Gurney Twp.
<i>Pristiphora erichsonii</i> Htg.	tL	Light defoliation occurred in McMillan, Clavet, Wicksteed, Haig, Fauquier, and Casselman twps.

Ink Spot of Aspen, *Ciborinia whetzellii* (Seaver) Seaver

This foliage disease occurred throughout the district in 1969 with high infection levels in Division 75. Evaluations carried out in Devitt, Elber, Idington, Owens, and O'Brien townships indicated light infections in each (Table 5). Although the areas evaluated contained small pockets of heavy, medium and light infections the overall infection level was light.

TABLE 5

Summary of Incidence and Level of Infection of Ink Spot of Aspen
in the Kapuskasing District in 1969

Location (township)	Size of area affected in acres	Size of trees	Level of incidence	Level of infection
Devitt	1000	30'	High	Light
Eilber	20	20'	High	Light
Idington	50	40'	High	Light
Owens	200	35'	High	Light
O'Brien	300	35'	High	Light
Reesor	20	45'	High	Trace

Hypoxyylon Canker of Poplar, Hypoxyylon mammatum (Wahl.) Miller

In 1969, four areas encompassing approximately 2,000 acres were surveyed to evaluate the occurrence of this pathogen. Evaluations revealed a high incidence of the organism in O'Brien Township (Table 6).

TABLE 6

Summary of Incidence and Level of Infection of Hypoxyylon Canker of Poplar
on Trembling Aspen Trees in the Kapuskasing District in 1969

Location (township)	Size of area affected in acres	Size of trees	Level of incidence	Level of infection
Shackelton	25	30'	Moderate	Light
McCrea	1500	35'	Moderate	Light
Eilber	500	40'	High	Light
O'Brien	100	30'	High	Trace

Leaf Blight on Balsam Poplar, Linospora tetraspora G. E. Thompson

Infection levels of this leaf blight of balsam poplar were less severe in 1969 than in 1968. Premature defoliation such as that which occurred in Division 74 in 1968 was not observed in 1969. Heavy levels of infection were present in McCrea, Lowther, Shetland, Way, Casgrain, and Swanson townships (Table 7).

TABLE 7

Summary of Incidence and Level of Infection of Leaf Blight of Balsam Poplar in the Kapuskasing District in 1969

Location (township)	Size of area affected in acres	Size of trees	Level of incidence	Level of infection
McCrea	30	40'	High	Heavy
Lowther	10	45'	High	Heavy
Shetland	10	40'	High	Heavy
Way	30	45'	High	Heavy
Casgrain	Unknown	35'	High	Heavy
Swanson	200	35'	High	Heavy

Wind Damage

Severe blowdown occurred on August 23, 1969 in an area north of Hearst. Damage varied considerably from light to severe in a band approximately 10 miles wide extending from the junction of the Otasawian and Nagagami rivers southeast via the Shannon Lake area to the middle of Sankey Township. Approximately half of the area of 200 square miles had been cut over and appreciable stands of white spruce, black spruce, jack pine, balsam fir, and trembling aspen were severely damaged. Extensive salvage operations are planned for the Limestone Rapids and Shannon Lake areas. Some wind damage also occurred in the Spruce Falls Power and Paper Company limits in Shackelton Township.

TABLE 8

Other Noteworthy Diseases

Organism	Host(s)	Remarks
<i>Armillaria mellea</i> (Vahl ex Fr.) Kummer	jP, bS	Trace in Seaton Twp.
<i>Chrysomyxa</i> sp.	wS	Trace in Swanson Twp.
<i>Cronartium comptoniae</i> Arth.	jP	Trace in Haig Twp.
<i>Cronartium ribicola</i> J.C. Fischer	wP	A moderate infection occurred in a plantation in Wicksteed Twp.

TABLE 8 (continued)

Organism	Host(s)	Remarks
<i>Melampsorella caryophyllacearum</i> Schroet.	bF	Trace in Parnell Twp.
<i>Peridermium</i> sp.	jP	Trace in Haig Twp.
<i>Pucciniastrum epilobii</i> Otth	bF	Trace in Seaton Twp.
<i>Scleroderris lagerbergii</i> Gremmen	jP	Trace in Fauquier Twp.