Port Arthur District, 1969
Reports of Forest Research Technicians

Weir, H.J.

Information Report O-X-130
(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 16 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.

PORT ARTHUR DISTRICT

1969

INTRODUCTION

This report deals with forest insect and disease surveys in the Port Arthur District in 1969. As in 1968 considerable time was spent on sampling for spruce budworm related to the chemical control operations in the Shebandowan Division and the French Lake area of the Fort Frances District.

The large aspen tortrix infestation reported in 1968 increased in size and intensity. Birch leaf miners caused severe discolouration of leaves at one location as did blotch miners on aspen. White pine weevil damage was high near English River and larch sawfly populations increased.

Needle rust of spruce was prevalent in the western part of the district. A severe wind and hail storm caused severe damage in the Lac des Mille Lacs area.

Appreciation is expressed to members of the Ontario Department of Lands and Forests and interested woods agencies for their assistance and cooperation.

H. J. Weir

Large Aspen Tortrix, Choristoneura conflictana Wlk.

There was a general increase in population levels of this insect in 1969. The moderate infestation reported in 1968 along Highway 17 in Conmee and Oliver townships increased in size from 10 acres to about 45 square miles of heavy infestation (see map). Defoliation of trembling aspen in this area ranged from 70 to 90 per cent. New areas of severe defoliation were observed in Sibley Peninsula and south of Dog Lake in Fowler and Ware townships. The Dog Lake infestation encompassed an area of approximately 150 square miles of trembling aspen and defoliation was 80 per cent. The outbreak in Sibley Peninsula defoliated 60 to 90 per cent of the aspen in 640 acres near Joe Lake and two smaller areas near Pass Lake and Pearl.

In Conmee Township literally hundreds of red-wing black birds, Agelaius phoeniceus were observed feeding on the pupae of this insect and a check of 100 cocoons revealed 53 per cent of the pupae had been removed. At Joe Lake 63 per cent of the pupae were missing, but the cause was not determined.

The last serious outbreak of this insect caused considerable defoliation in the Pigeon River area in 1957 and 1958.

Spruce Budworm, Choristoneura fumiferana (Clem.)

Two new areas of severe defoliation were observed in the southwestern part of Division 34, approximately 25 miles south of Burchell Lake. One area of 1200 acres was located five miles north of the Minnesota border and one mile east of Granite Lake. The other area of 2800 acres was located on the south shore of Northern Light Lake (see map). The Granite Lake infestation is surrounded by no susceptible forest, whereas the Northern Light Lake infestation has an extensive area of white spruce and balsam fir to the north, west and east.

Larval sampling was carried out at six widely scattered locations in the district and only a single larva was found at each location.

Egg mass counts were taken at 13 locations around and within the two infestations and on the basis of these counts the following defoliation forecasts are made (Table 1).

TABLE 1

Summary of Egg Mass Counts in the Port Arthur District in 1969 and Defoliation Forecasts for 1970

Location	No. of egg masses per 100 sq. feet of foliage	Defoliation forecast for 1970
Gunflint Lake (east end)	5	Nil to light
Trout Bay (south end)	15	" " "
Devils Elbow	20	" " "
North Lake	4	" " "
Greer Lake	5	" " "
Savage Bay	7	" " "
Sunbow Lake	2	" " "
Canthook Lake	4	" " "
Melvin Lake (west end)	3	" " "
Melvin Lake (south side)	3	" " "
Granite Lake	121	Moderate to severe
Northern Light Lake	238	Severe

Larch Casebearer, Coleophora laricella (Hbn.)

Low populations occurred at all sample points in the district in 1969 particularly in MacGregor Township where populations declined from an average of eight larvae per 18" branch in 1967 to less than one larva per branch in 1969 (Table 2).

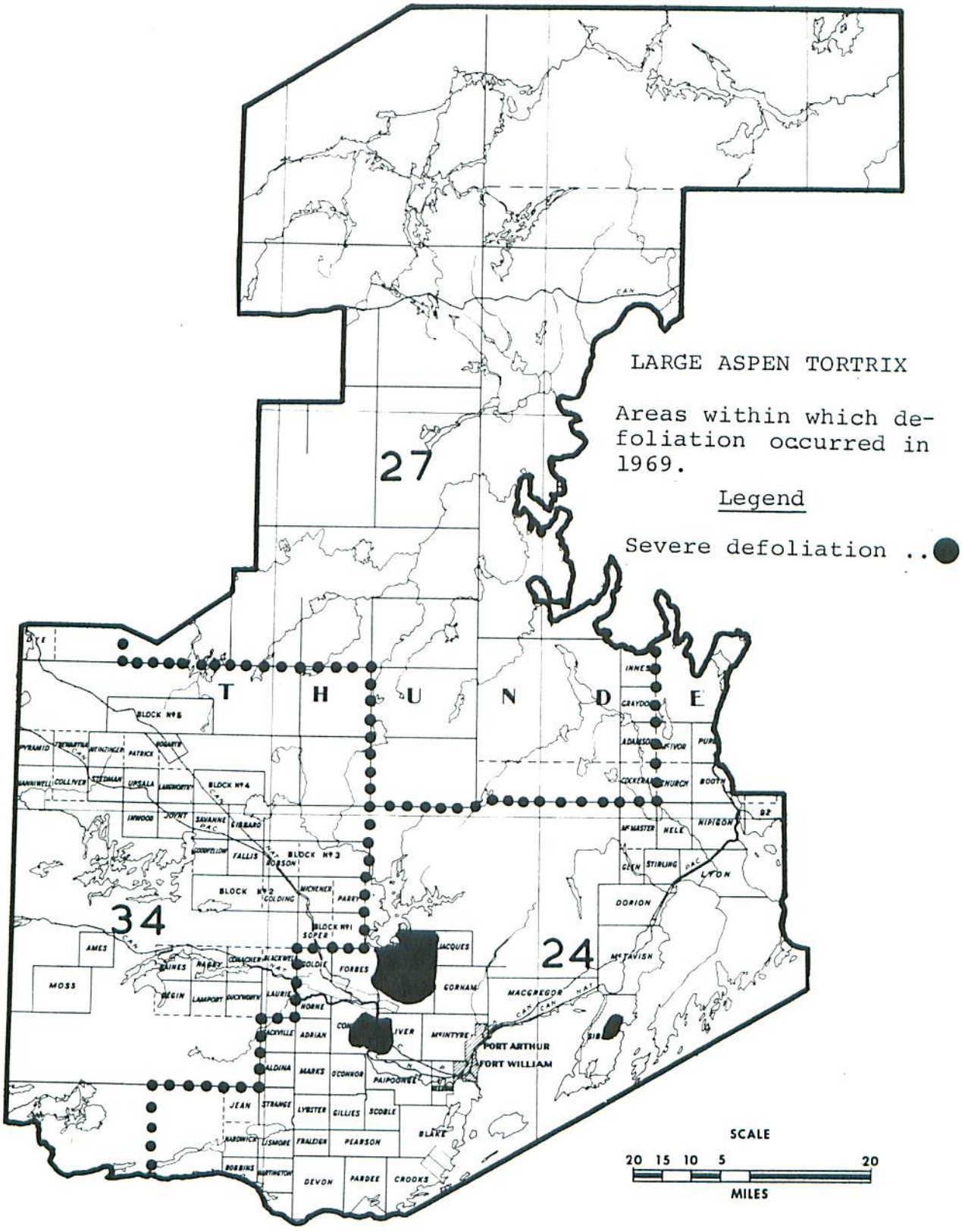
TABLE 2

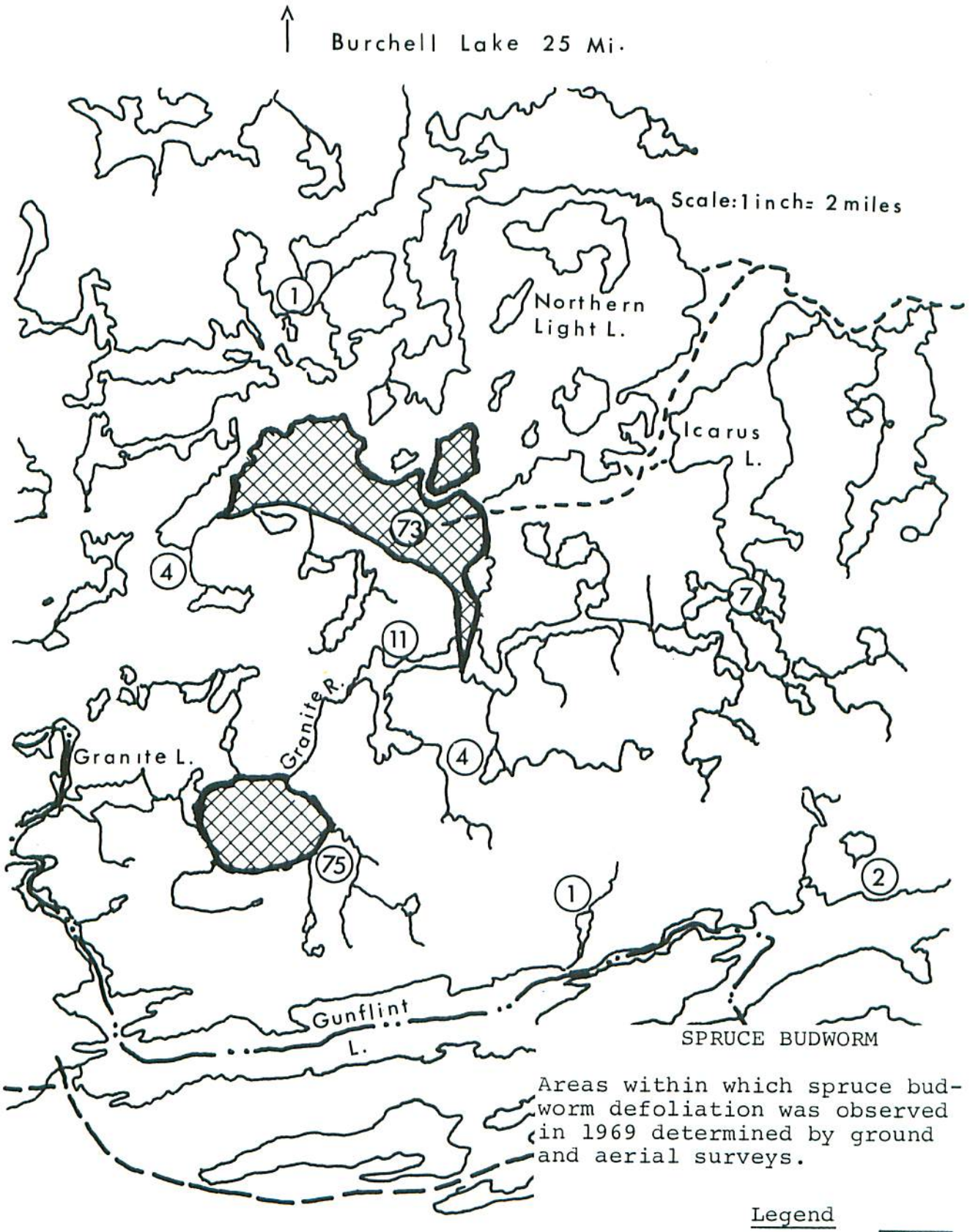
Summary of Counts of the Larch Casebearer in the Port Arthur District from 1967 to 1969

Note: Counts were based on the examination of four 18-inch branch tips from each of four trees at each location.

Location (township)	Host	Av. d.b.h. of sample trees in inches	Av. no. larvae per 18" branch tip 1967	1968	1969
Devon	tL	10	--	--	0.1
MacGregor	eL	8	8.4	2.0	0.3
McTavish	tL	8	0	1.0	0.2
O'Connor	tL	10	0.1	0.5	0.1
Paipoonge	tL	8	--	0.1	0.2

PORT ARTHUR DISTRICT




Burchell Lake 25 Mi.
Scale: 1 inch = 2 miles
Northern Light L.
Icarus L.
Granite L.
Granite R.
Gunflint L.
1
2
4
7
11
73
75
SPRUCE BUDWORM
Areas within which spruce budworm defoliation was observed in 1969 determined by ground and aerial surveys.
Legend
Severe defoliation .....
Per cent defoliation 4
MINN.

Birch Leaf Miner, Fenusa pusilla Lep.

There was a general increase in population levels of this miner in 1969. Heavy infestations were observed between Black Sturgeon Lake and Gull Bay on the Armstrong Road (Table 3). A moderate infestation occurred on open-grown regeneration in Scoble Township. Low populations were observed commonly in the remainder of the district.

TABLE 3

Summary of Birch Leaf Miner Counts in the Port Arthur District in 1969

Note: Counts were based on the examination of 100 leaves taken at random from three trees at each location.

Location	Av. d.b.h. of sample trees in inches	Per cent of leaves mined
Black Sturgeon Lake	2	23
Gull Bay	3	67
Scoble Twp.	2	35
Swallow Lake	4	26

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

A general increase in populations occurred in 1969. Moderate infestations were observed in O'Connor, Goldie and Blackwell townships in Division 24 (Table 4). Light to moderate infestations were observed along the Armstrong Road near Black Sturgeon Lake. A light infestation occurred along Highway 17 near Finmark.

TABLE 4

Summary of Aspen Blotch Miner Counts in Port Arthur District in 1969

Note: Counts were based on the examination of 100 leaves chosen at random from three trees at each location.

Location	Av. d.b.h. of trees in inches	Per cent of leaves mined
Black Sturgeon Lake	3	19
Blackwell Twp.	3	39
Finmark	2	13
Goldie Twp.	3	21
O'Connor Twp.	4	56

Blotch Miner on Balsam Poplar, Lithocolletis sp.

Heavy infestations occurred at all sample points in Division 24. Little change in population levels occurred in Conmee, Marks, Oliver, and O'Connor townships. Quantitative samples are shown in Table 5.

TABLE 5

Summary of Leaf Mining by Lithocolletis sp. in the Port Arthur District from 1967 to 1969

Note: Counts were based on the examination of 100 leaves picked at random from three trees at each location.

Location (township)	Av. d.b.h. of sample trees in inches	Per cent of leaves mined 1967	1968	1969
Conmee	7	68	81	85
Marks	8	90	96	92
O'Connor	6	99	98	82
Oliver	5	63	98	96

Jack-pine Sawfly, Neodiprion pratti banksianae Roh.

There was a general increase in population levels of this sawfly in 1969. Light defoliation was observed in Paipoonge, Neebing, Oliver, and Hagey townships. Colony counts on 100 trees at each location are shown in Table 6.

TABLE 6

Summary of Jack-pine Sawfly Colony Counts in the Port Arthur District in 1969

Location (township)	Av. d.b.h. of sample trees in inches	Total no. of colonies per 100 tree sample
Hagey	2	16
Neebing	3	10
Oliver	5	5
Paipoonge	10	13

White Pine Weevil, Pissodes strobi Peck

There was little change in population levels of this insect in 1969. Severe damage to stunted jack pine was observed along Highway 17 in Trewartha Township. A moderate infestation persisted in a Norway spruce plantation in Marks Township in Division 24. Light damage was again apparent in Conmee and Paipoonge townships (Table 7).

TABLE 7

Summary of Damage by the White Pine Weevil in Port Arthur District from 1967 to 1969

Note: Counts were based on the number of damaged leaders on 100 trees at each location.

Location (township)	Host	Av. d.b.h. of sample trees in inches	Per cent trees weevilled 1967	1968	1969
Conmee	jP	1	--	--	5
English River	jP	2	--	--	3
Marks	nS	3	19	25	16
Paipoonge	jP	1	5	5	6
Trewartha	jP	2	--	--	63

Larch Sawfly, Pristiphora erichsonii (Htg.)

Population levels of this sawfly remained virtually unchanged in 1969. Severe defoliation of larch stands recurred along Highway 17 between Raith and English River and along the Armstrong Road. Moderate defoliation occurred near the cities of Port Arthur and Fort William. Severe defoliation of individual open-grown larch trees was common throughout the district.

TABLE 8

Other Noteworthy Insects

Insect	Host(s)	Remarks
Aphrophora parallela Say	jP	Pockets of heavy infestation in Paipoonge Twp. and near the Fort Frances border, some twig mortality at the latter
Choristoneura pinus pinus Free.	jP	Light defoliation near Lands and Forests Tree Nursery in Paipoonge Twp.
Gracillaria spp.	wB	Heavy infestation recurred near Plume Lake
Neodiprion virginianus complex	jP	Light defoliation of small jack pine trees near Blind Bay, Lac des Mille Lacs
Petrova albicapitana (Busck.)	jP	Moderate infestation near Spruce River Road
Phratora hudsonia Brown	wB	Moderate infestations near Uneven and Kopke lakes in Armstrong Division

Armillaria Root Rot, Armillaria mellea (Vahl ex Fr.) Kummer

A trace infection centre was observed at one location in 1969. In a Lands and Forests pine plantation situated four miles west of the junction of Highways 17 and 11 in Goldie Township incidence was 47 per cent and infection level was trace. Twelve per cent of the jack pine trees examined were killed by this organism.

Needle Rusts of Spruce, Chrysomyxa ledi (Alb. & Schw.) d By. and Chrysomyxa ledicola Lagh.

There was a general increase in the occurrence of these needle rusts throughout the district. A moderate infection level was observed along Highway 17 between Upsala and English River. Incidence in this area was 90 per cent. Trace infection levels were observed near Kopke Lake on the

Armstrong Road, near Raith on Highway 17 and 12 miles west of Kashabowie Lake on Highway 11. Incidence in these areas was 55, 65, and 80 per cent, respectively. Examination of 15 blue spruce trees, five miles east of Upsala on Highway 17 revealed 100 per cent incidence and a high infection level.

White Pine Blister Rust, Cronartium ribicola J.C. Fischer

This pathogen was prevalent in varying degrees of intensity throughout the range of white pine in the district. Near Pickerel Lake on Sibley Peninsula the incidence of diseased trees was 61 per cent and the infection level was trace. Trace infection levels were observed in divisions 24 and 34.

Needle Cast of Jack Pine, Davisomycella ampla (Davis) Darker

This needle cast was observed at two locations in 1969. In a large stand of jack pine, three miles east of English River on Highway 17, the incidence was 25 per cent and the infection level was trace. Scattered infected trees were observed near Twin City Forks in Paipoonge Township.

Leaf Wilt of Balsam Poplar, Marssonina populi (Lib.) Magn.

There was an increase in occurrence of this leaf wilt in 1969. A 10 acre stand of balsam poplar bordering the Armstrong Road 40 miles north of Black Sturgeon Lake revealed 90 per cent incidence and a moderate level of infection. Two windbreaks near Intola on Highway 17A were heavily infected.

Wind and Hail Damage

A large area of heavy damage was caused by a severe wind and hail storm in the early spring. The area affected was situated between the Fort Frances District border and Bolton Bay on Lac des Mille Lacs (see map).

Wind damage occurred in two areas, the first area of 10 square miles west of West Bedwere Lake and the second an area of five square miles was located near Bolton Bay. Large white pine and white spruce were uprooted in both areas.

The hail caused a higher degree of damage to balsam fir and other smooth barked trees than to black and white spruce (see photograph). Some mortality of balsam fir is expected through most of the 50 square miles of damage.

Winter Drying

Severe browning in plantings of Norway spruce and red pine occurred four miles east of Pearl on Highway 17. Ninety per cent of the stems examined were affected. A few planted red pine were lightly affected near Jumbo Gardens 1 mile west of Port Arthur on Highway 17A. Little damage was observed at the latter location.

TABLE 9

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Coleosporium asterum (Diet.) Syd.	jP	Trace infection level one mile east of Fort Frances border on Highway 11
Cronartium comandrae Pk.	jP	Few rust galls on root collar of planted stock in Goldie Twp. Incidence was 8 per cent. Infection level was trace
Fomes pinicola (Sw. ex Fr.) Cke.	bF	High level of incidence of heart rot in stands of mature trees at numerous locations in the Spruce River Road area. Approximately 75 per cent of trees infected
Pollaccia elegans Serv.	bPo	High level of infection to regeneration along Armstrong Road near Black Sturgeon Lake
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	High level of infection on regeneration along Pace Lake Road

PORT ARTHUR DISTRICT