Fort Frances District, 1969
Reports of Forest Research Technicians

Hook, John

Information Report O-X-134
(Forest Research Laboratory, Ontario Region)

CANADA

OUR FILE NO.
NOTRE DOSSIER NO

YOUR FILE NO.
VOTRE DOSSIER NO

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.

...2

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.

FORT FRANCES DISTRICT

1969

INTRODUCTION

INTRODUCTION

Forest insects that presented major problems in 1969, were: the spruce budworm, forest tent caterpillar, jack-pine budworm and larch sawfly. An aerial spraying operation against the spruce budworm involving 5,000 acres near French Lake was carried out in June. The infestation of the forest tent caterpillar that has persisted for the past ten years increased in extent in the western part of the district. Infestations of the jack-pine budworm virtually collapsed. Populations of the larch sawfly increased throughout the district.

John Hook

The Fall Cankerworm, Alsophila pometaria (Harr.)

A sharp decrease in population levels of this hardwood defoliator occurred in the town of Fort Frances and surrounding area. The heavy infestation which caused severe defoliation to shade trees for the past three years declined to light infestation on scattered trees in 1969.

Spruce Budworm, Choristoneura fumiferana (Clem.)

Chemical control operations involving aerial spraying of 5,000 acres of spruce-fir forest, between French and Windigoostigan lakes was repeated in 1969. This operation appears to have successfully reduced this infestation since egg counts (Table 1), indicate that only small pockets of light defoliation will occur in this area in 1970. Small numbers of larvae were also detected by beating mat sampling elsewhere in the district. The highest count was 17 larvae per 20 beating mat samples, which occurred at Tanner Lake (Table 2).

TABLE 1

Summary of Egg Mass Counts in the Fort Frances District in 1969 and Defoliation Forecast for 1970

Note: Counts based on the examination of one branch from the mid crown of six balsam fir trees at each location

Location	No. of egg masses per 100 sq. feet of foliage	Defoliation forecast for 1970
McKenzie Lake (E.)	0	Nil
Cache Lake	0	Nil
Trouser Lake	0	Nil
French Lake	9	Light
Northland Gateway	0	Nil
Pickerel River	6	Light
Windigoostigan Lake	0	Nil
(Hydro Crossing)	7	Light
Eva Lake (North)	5	Light
Nydia Lake (North)	0	Nil
Ferguson Lake	9	Light
McKenzie Lake (S.W.)	0	Nil
Saganagons Lake	2	Light
Crooked Pine Lake (E.)	0	Nil
French River	4	Light
N.E. Domtar Camp	7	Light

TABLE 2

Summary of Spruce Budworm Larval Counts in the Fort Frances District in 1969

Note: Counts based on two mat samples from each of ten trees.

Location	Host	Total no. of branches samples	Av. d.b.h. of sample trees in inches	Total no. of larvae
Tanner Lake	bF	43	4	17
Saganagons Lake	bF	41	6	0
Sifton Twp.	wS	47	4	1
Mather Twp.	bF	55	4	1
Potts Twp.	bF	61	3	1

Jack-pine Budworm, Choristoneura pinus pinus Free.

Population levels of this budworm decreased in 1969. The pocket of light infestation which persisted for four years in the northwestern part of the district, declined to trace levels in 1969 (see map). In the central part of the district, the highest number of larvae recorded was four per twenty beating tray samples, which occurred at Pearson's Road (Table 3).

TABLE 3

Summary of Jack-pine Budworm Larval Counts in Fort Frances District in 1969

Location	Av. d.b.h. of sample trees in inches	Total no. of larvae per 20 mat sample
Pearson's Rd.	10	4
Morson Twp.	8	0
Dance Twp.	8	1
Potts Twp.	8	0
Mine Centre	8	0

Larch Casebearer, Coleophora laricella Hbn.

Intensive surveys failed to reveal a further extension in the boundaries of this casebearer in the district. Populations remained at approximately the same level as in 1968, (Table 4).

TABLE 4

Summary of Larch Casebearer Larval Counts in Fort Frances District in 1968 and 1969

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

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of larvae per 18 inch branch tip	
		1968	1969
Crozier Twp.	4	.68	.62
Dobie Twp.	4	.24	.31

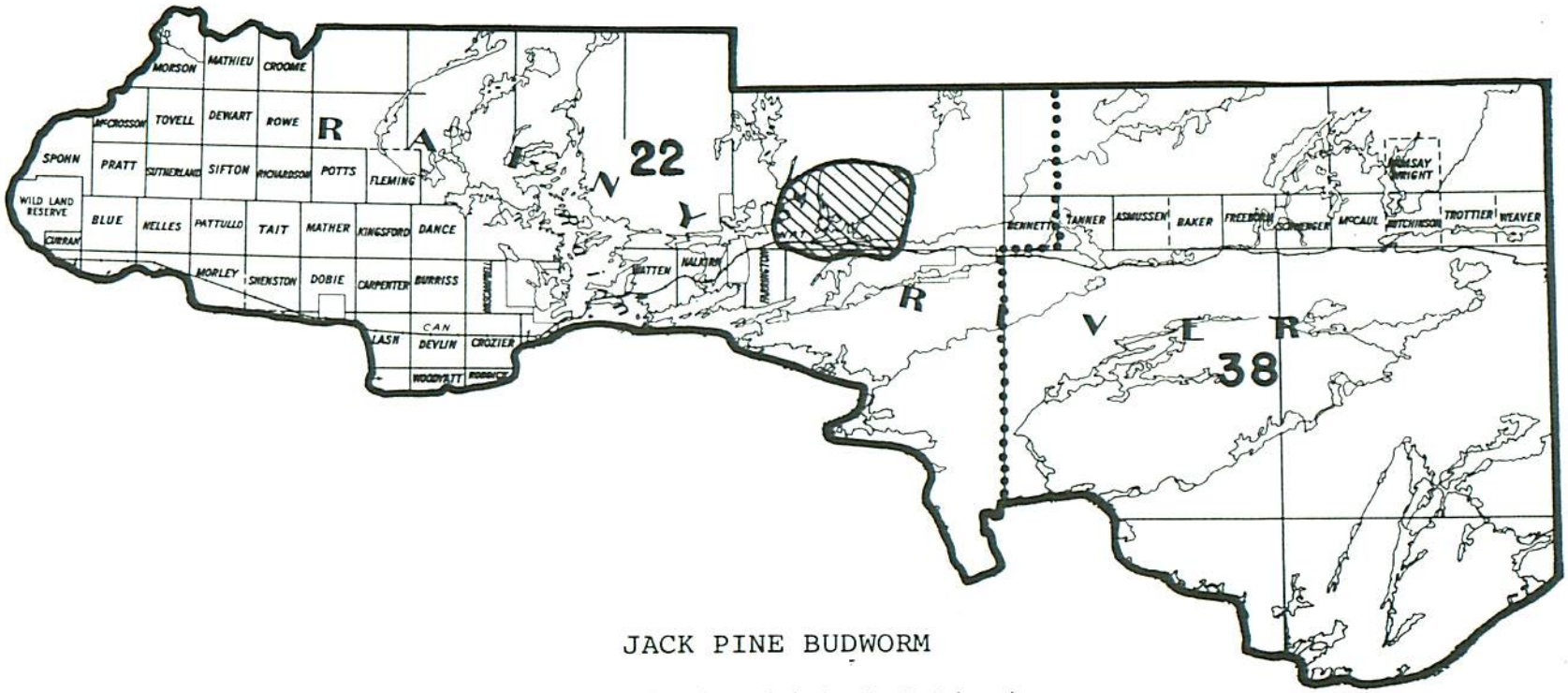
A Noctuid, Enargia decolor Wlk.

Pockets of light to moderate defoliation occurred on trembling aspen in the western part of the district, (see photograph). This was the first record of this leaf tier in the district since 1961.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

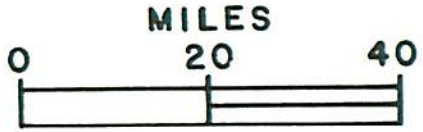
Since 1965, a steady decline in the boundaries of the tent caterpillar infestation occurred in the district. However in 1969, the infestation extended westward in Richardson, Tait, and Mather townships, where light to moderate defoliation occurred. Moderate to severe defoliation persisted for the ninth consecutive year north and west of Fort Frances (see map). One colony was observed at Eltrut Lake 50 miles east of the main infestation. An egg band survey was carried out throughout the infested and surrounding areas. Results indicate that light to severe defoliation will occur over much the same areas in 1970 (Table 5).

FORT FRANCES DISTRICT



JACK PINE BUDWORM

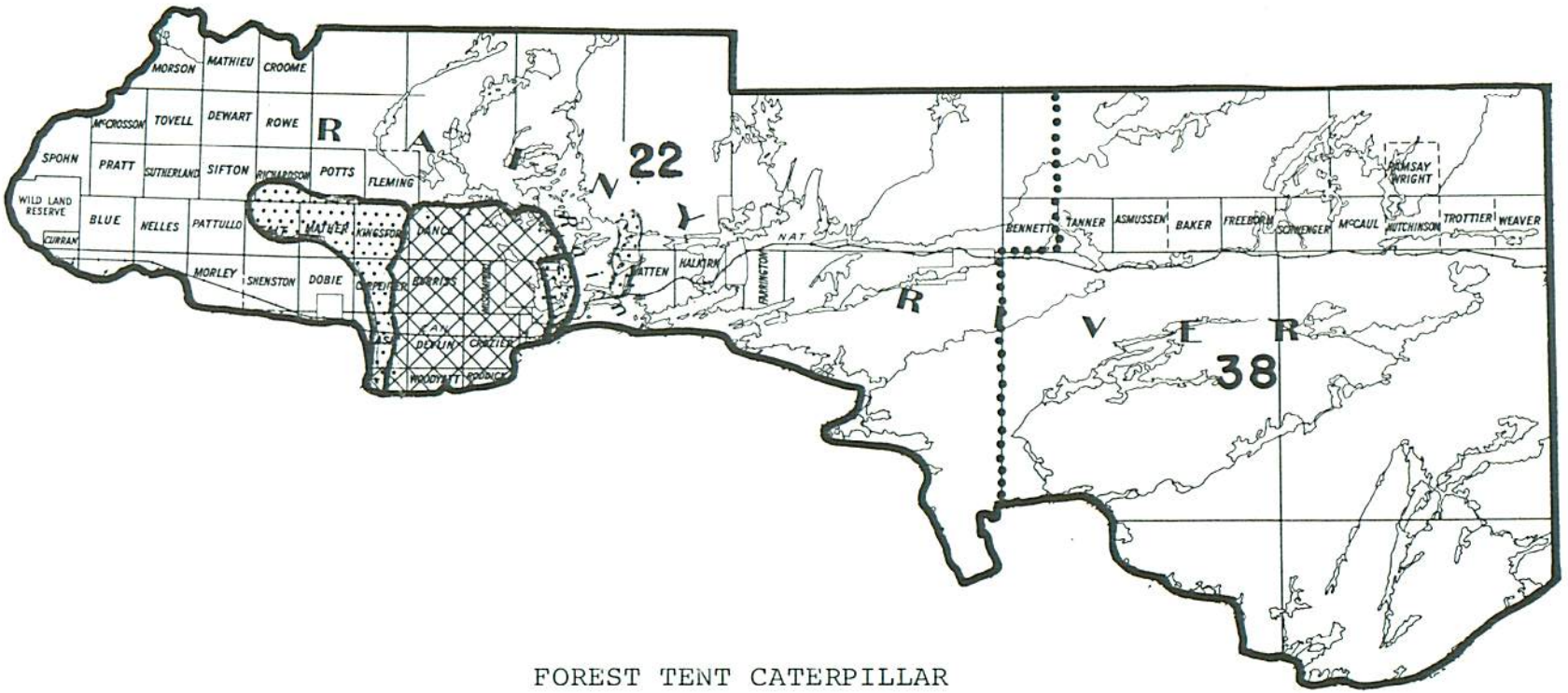
Areas within which defoliation occurred in 1969.



Legend

Moderate defoliation .....

FORT FRANCES DISTRICT



FOREST TENT CATERPILLAR

Areas within which defoliation of aspen occurred in 1969.

MILES

0 20 40

Legend

Moderate to severe defoliation ...

Light defoliation .....

TABLE 5

Summary of Forest Tent Caterpillar Egg Band Counts and Infestation Forecast for 1970 in the Fort Frances District

Location	Av. d.b.h. of sample trees in inches	No. of trees sampled	Total no. of egg bands at each location	Defoliation forecast for 1970
Woodyatt Twp.	5	1	61	Severe
Miscampbell Twp.	8	1	58	Severe
Dobie Twp.	4	3	13	Moderate
(Camp Narrows				
(Rainy Lake	6	1	11	Moderate
Tait Twp.	6	3	1	Light
(North of MacDonald				
(Inlet, Rainy Lake	5	2	16	Moderate
Crozier Twp.	3	1	36	Severe

Western Tent Caterpillar, Malacosoma californicum pluviale (Dyar)

The unusual tent caterpillars collected on gooseberry on an island in Rainy Lake in 1968, have been recorded mainly in the United States and this would appear to be the first Ontario discovery. In 1969, intermediates were observed along the Rainy River feeding on willow in conjunction with typical pluviale larvae.

Red Pine Sawfly, Neodiprion nanulus nanulus Schedl

Although population levels remained low this sawfly was found more commonly than in recent years. The highest count occurred on an island in Rainy Lake, where 9 colonies per 10 trees were recorded.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

A slight increase in population levels of this sawfly occurred on open-grown jack-pine trees in Hutchinson Township, and in the Rainy Lake area. Highest count recorded was on islands in Rainy Lake, where 22 colonies per 10 trees occurred.

Yellow-headed Spruce Sawfly, Pikonema alaskensis (Roh.)

Damage caused by this sawfly was observed commonly on open-grown white spruce trees, particularly along Highway 11 between Fort Frances and Rainy River, where defoliation ranged from 10 to 75 per cent. Individual trees in the town of Fort Frances were severely defoliated.

White-pine Weevil, Pissodes strobi (Peck)

Populations of this weevil have remained at approximately the same levels for the fourth consecutive year. The heaviest damage was recorded in Griesinger Township, where six per cent of the leaders were killed (Table 6).

TABLE 6

Summary of Leader Mortality by the White-pine Weevil at Four Points in the Fort Frances District

Note: Counts were based on the examination of 100 trees at each point.

Location	Tree species	Av. d.b.h. of sample trees in inches	Per cent of leaders killed 1968	1969
Seine River	jP	2	6	3
Griesinger Twp.	jP	2	8	6
Morson Twp.	jP	2	5	5
Kingsford Twp.	wP	2	-	3

Larch Sawfly, Pristiphora erichsonii (Htg.)

For the past three years population levels of this sawfly have increased. Pockets of moderate to severe defoliation occurred in larch stands throughout the district. The most noteworthy of these pockets occurred in a ten-acre stand in Burris Township where severe defoliation was observed.

TABLE 7

Other Noteworthy Insects

Insect	Host(s)	Remarks
Altica ambiens alni Harr.	Al	Heavy population on lake shore trees, Rainy Lake North
Aphrophora parallela Say	scP	A five acre Scots pine plantation heavily infested, Wasaw Lake Road
Capitophorus braggii Gill.	Ribes	Moderate infestation on red currant bushes in the town of Fort Frances
Lithocolletis salicifoliella Cham.	W, tA	High population of leaf miners north shore Nydia Lake
Nematus ribesii (Scap.)	Ribes	Medium infestation on red currant bushes in the town of Fort Frances
Profenus canadensis (Marl.)	Haw-thorne	Heavy damage occurred in the western part of the district

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

Infected white-pine trees in all diameter classes were observed throughout the district in 1969. Heaviest infection occurred on islands in the Rainy Lake area. Small numbers of trees approximately six feet high were infected in plantations near Wasaw Lake, and in Kingsford Township.

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

In 1969 as in 1968, this organism was prevalent throughout the district. The highest number of branch galls was observed on small jack-pine trees along the road to Finlayson Lake. Stem galls were not observed at any location where evaluations were carried out.

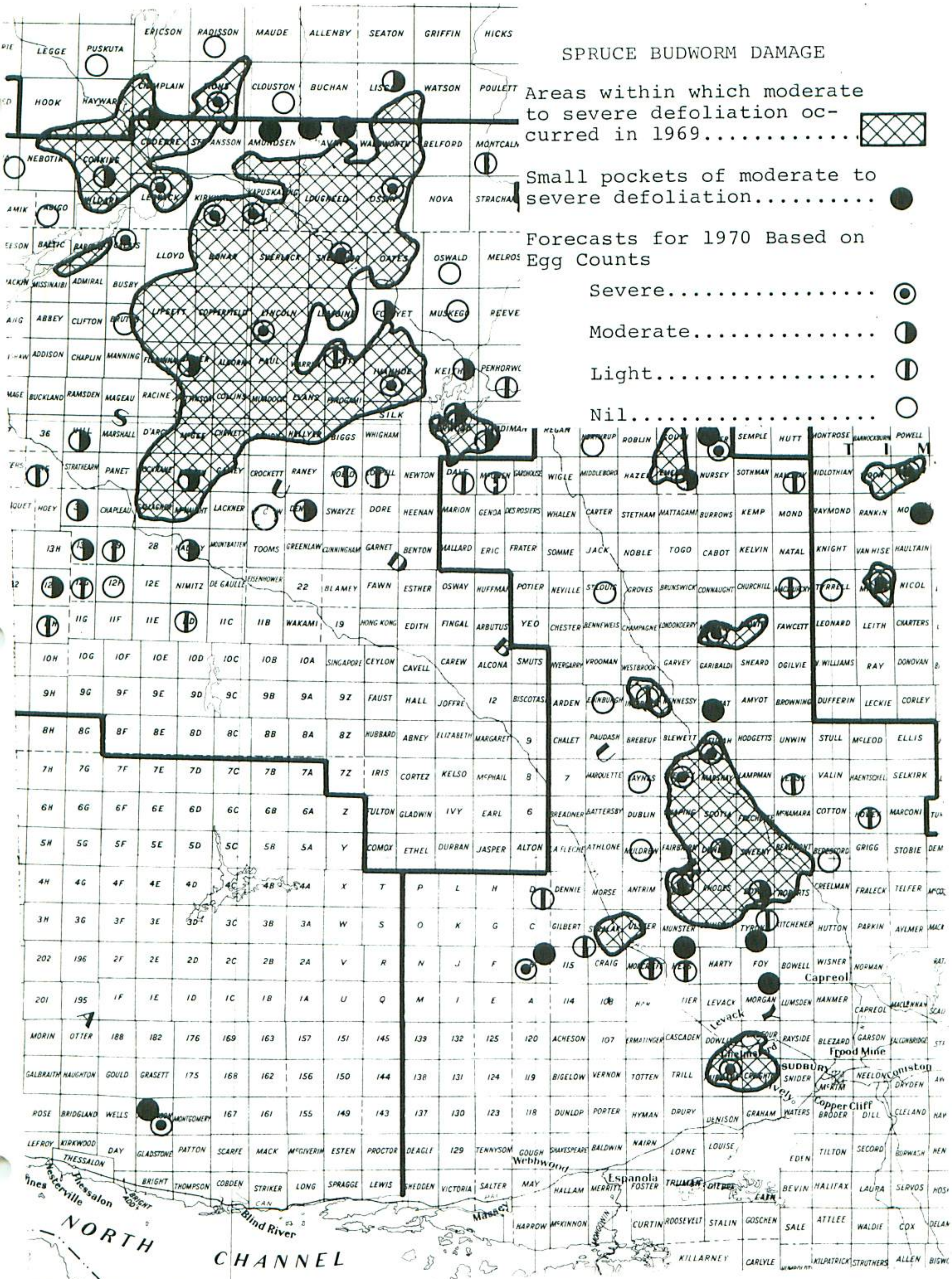
Hypoxylon Canker of Poplar, Hypoxylon mammatum (Whal.) Miller

Little change in the status of this disease occurred throughout the district in 1969. However, this pathogen continues to cause mortality in the seven trembling aspen sample plots established in 1963. Highest mortality in 1969 attributed to H. mammatum was 3 per cent which occurred in the plot located in the Northeast Bay of Rainy Lake.

TABLE 8

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Chrysomyxa sp.	bS	Moderate infection observed at two locations, Rainy Lake and Burriss Twp.
Cytospora chrysosperma (Pers.) Fr.	tA	Several trees infected in Curran Twp.
Gloeosporium quercinum Westd.	rO	Moderate infection, leaf wilt especially on open grown hosts in the western part of the district
Pollaccia elegans Serv.	bPo	Light infection on reproduction hosts in Tait Twp.
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	Light to moderate damage on roadside reproduction hosts along Highway #11 between Pearson's Road, and Flanders, and on islands in Rainy Lake
Pucciniastrum epilobii Otth.	bF	Collected on understory hosts, Finlayson Lake
Melampsorella caryophyllacearum Schroet.	bF	Several trees infected north of Rainy Lake, and Finlayson Lake, Atikokan area.
Frost damage	wS, bS	Light to moderate damage to buds occurred throughout the district


SPRUCE BUDWORM DAMAGE
Areas within which moderate to severe defoliation occurred in 1969............
Small pockets of moderate to severe defoliation..........
Forecasts for 1970 Based on Egg Counts
Severe..................
Moderate................
Light...................
Nil.....................
ERICSON
RADISSON
MAUDE
ALLENBY
SEATON
GRIFFIN
HICKS
LEGGE
PUSKUTA
CLOUSTON
BUCHAN
WATSON
POULETT
HOOK
BELFORD
MONTCALM
NOVA
STRACHAN
LLOYD
OSWALD
MELROSE
MUSKEG
REEVE
PENHORWOOD
ABBEY
CLIFTON
ADDISON
CHAPLIN
MANNING
BUCKLAND
RAMSDEN
MAGEAU
RACINE
MARSHALL
PANET
HOEY
CHAPLEAU
LACKNER
CROCKETT
RANEY
NEWTON
SWAYZE
DORE
HEENAN
MARION
GENOA
WIGLE
WHALEN
CARTER
STETHAM
BURROWS
KEMP
MOND
RAYMOND
RANKIN
TOOMS
GREENLAW
CUNNINGHAM
GARNET
BENTON
MALLARD
ERIC
FRATER
SOMME
JACK
NOBLE
TOGO
CABOT
KELVIN
NATAL
KNIGHT
VAN HISE
HAULTAIN
NIMITZ
DE GAULLE
EISENHOWER
BLAMEY
FAWN
ESTHER
OSWAY
POTIER
NEVILLE
GROVES
BRUNSWICK
CONNAUGHT
CHURCHILL
NICOL
WAKAMI
HONG KONG
EDITH
FINGAL
ARBUTUS
YEO
CHESTER
BENNEWEIS
CHAMPAGNE
LONDONDERRY
FAWCETT
LEONARD
LEITH
CHARTERS
SINGAPORE
CEYLON
CAVELL
CAREW
ALCONA
SMUTS
VROOMAN
WESTBROOK
GARVEY
GARIBALDI
SHEARD
OGILVIE
RAY
DONOVAN
FAUST
HALL
JOFFRE
BISCOTASI
ARDEN
AMYOT
BROWNING
DUFFERIN
LECKIE
CORLEY
HUBBARD
ABNEY
ELIZABETH
MARGARET
CHALET
PAUDASH
BREBEUF
BLEWETT
HODGETTS
UNWIN
STULL
McLEOD
ELLIS
IRIS
CORTEZ
KELSO
McPHAIL
MARQUETTE
LAMPMAN
VALIN
HAENTSCHEL
SELKIRK
FULTON
GLADWIN
IVY
EARL
BREADNER
BATTERSBY
DUBLIN
SCOTIA
McNAMARA
COTTON
MARCONI
COMOX
ETHEL
DURBAN
JASPER
ALTON
LA FLECHE
ATHLONE
FAIRBAIRN
SHEENY
BERESFORD
GRIGG
STOBIE
DENNIE
MORSE
ANTRIM
ROBERTS
CREELMAN
FRALECK
TELFER
GILBERT
MUNSTER
TYRONE
KITCHENER
HUTTON
PARKIN
AYLMER
CRAIG
HARTY
FOY
BOWELL
WISNER
NORMAN
Capreol
LEVACK
MORGAN
LUMSDEN
HANMER
CAPREOL
MACLENNAN
Levack
MORIN
OTTER
ACHESON
ERMATINGER
CASCADEN
RAYSIDE
BLEZARD
GARSON
FALCONBRIDGE
Frood Mine
GALBRAITH
NAUGHTON
GOULD
GRASETT
BIGELOW
VERNON
TOTTEN
TRILL
SUDBURY
SNIDER
McKIM
NEELON
Coniston
DRYDEN
ROSE
BRIDGLAND
WELLS
MONTGOMERY
DUNLOP
PORTER
HYMAN
DRURY
DENISON
GRAHAM
WATERS
Copper Cliff
BRODER
DILL
CLELAND
LEFROY
KIRKWOOD
DAY
GLADSTONE
PATTON
SCARFE
MACK
McGIVERIN
ESTEN
PROCTOR
DEAGLE
TENNYSON
GOUGH
SHAKESPEARE
BALDWIN
NAIRN
LORNE
LOUISE
EDEN
TILTON
SECORD
BURWASH
THESSALON
BRIGHT
THOMPSON
COBDEN
STRIKER
LONG
SPRAGGE
LEWIS
SHEDDEN
VICTORIA
SALTER
MAY
HALLAM
MERRITT
Espanola
FOSTER
TRUMAN
BEVIN
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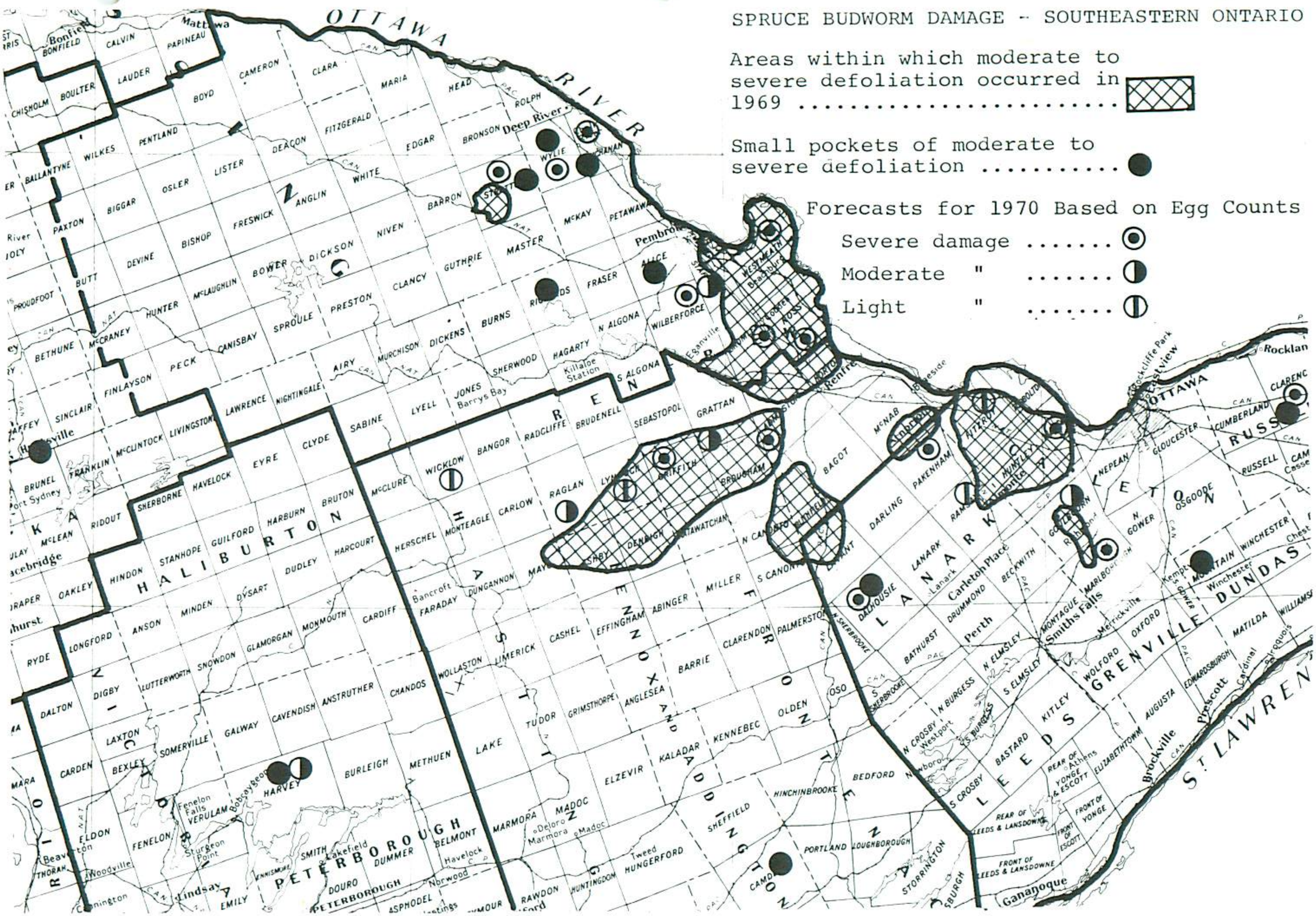
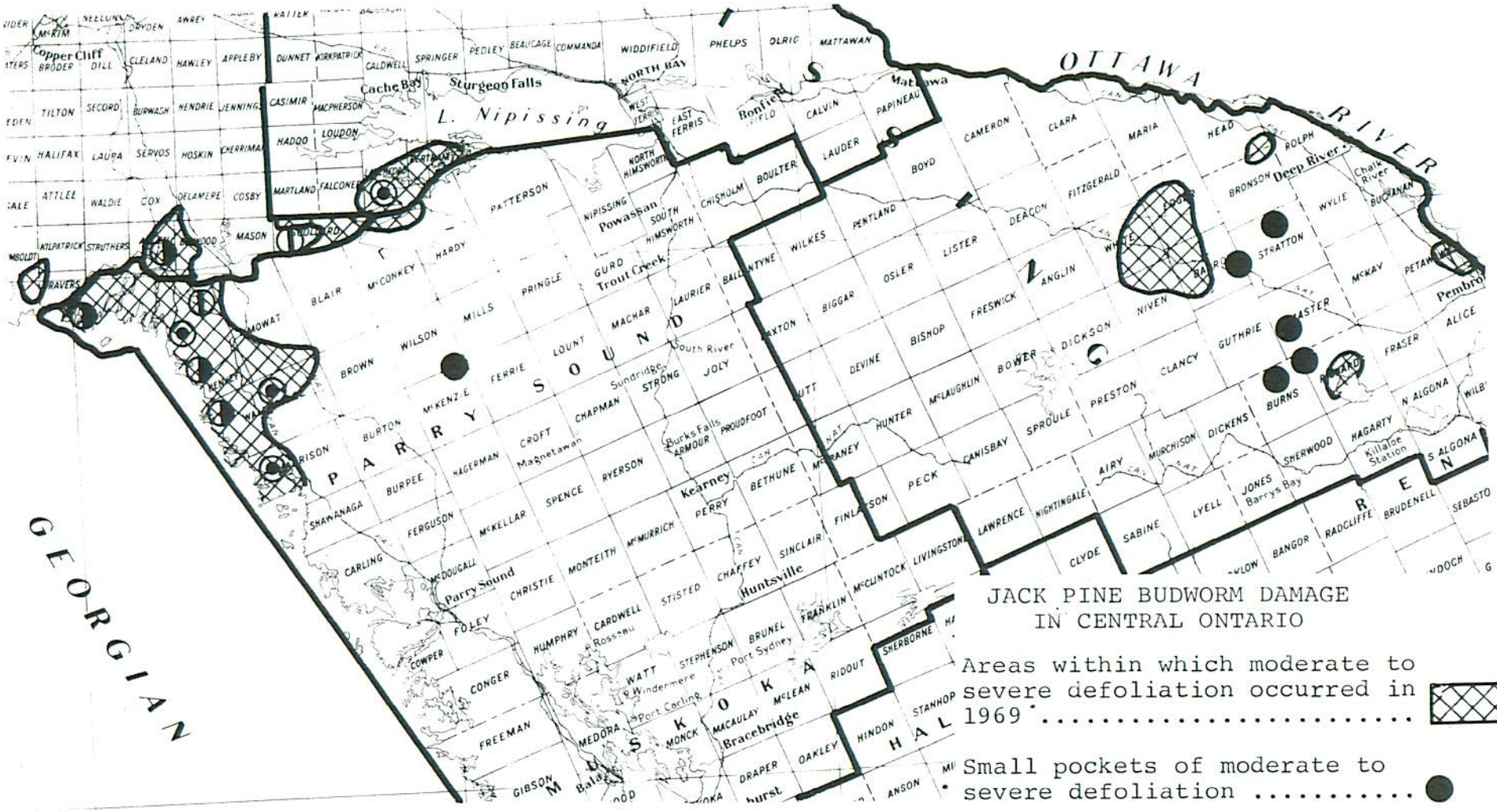
STALIN
GOSCHEN
SALE
ATTLEE
WALDIE
COX
KILLARNEY
CARLYLE
KILPATRICK
STRUTHERS
ALLEN
Webbwood
Massey
Blind River
Thessalon
Iron Bridge
NORTH
CHANNEL
SILK


SPRUCE BUDWORM DAMAGE - SOUTHEASTERN ONTARIO
Areas within which moderate to severe defoliation occurred in 1969 ....
Small pockets of moderate to severe defoliation ....
Forecasts for 1970 Based on Egg Counts
Severe damage ....
Moderate " ....
Light " ....
OTTAWA RIVER
HALIBURTON
LANARK
LEEDS
GRENVILLE
DUNDAS
PETERBOROUGH
ST LAWRENCE



JACK PINE BUDWORM DAMAGE
IN CENTRAL ONTARIO

Areas within which moderate to severe defoliation occurred in 1969 .....

Small pockets of moderate to severe defoliation .....

Infestation Potential for 1970
Based on Egg Counts

Severe .....

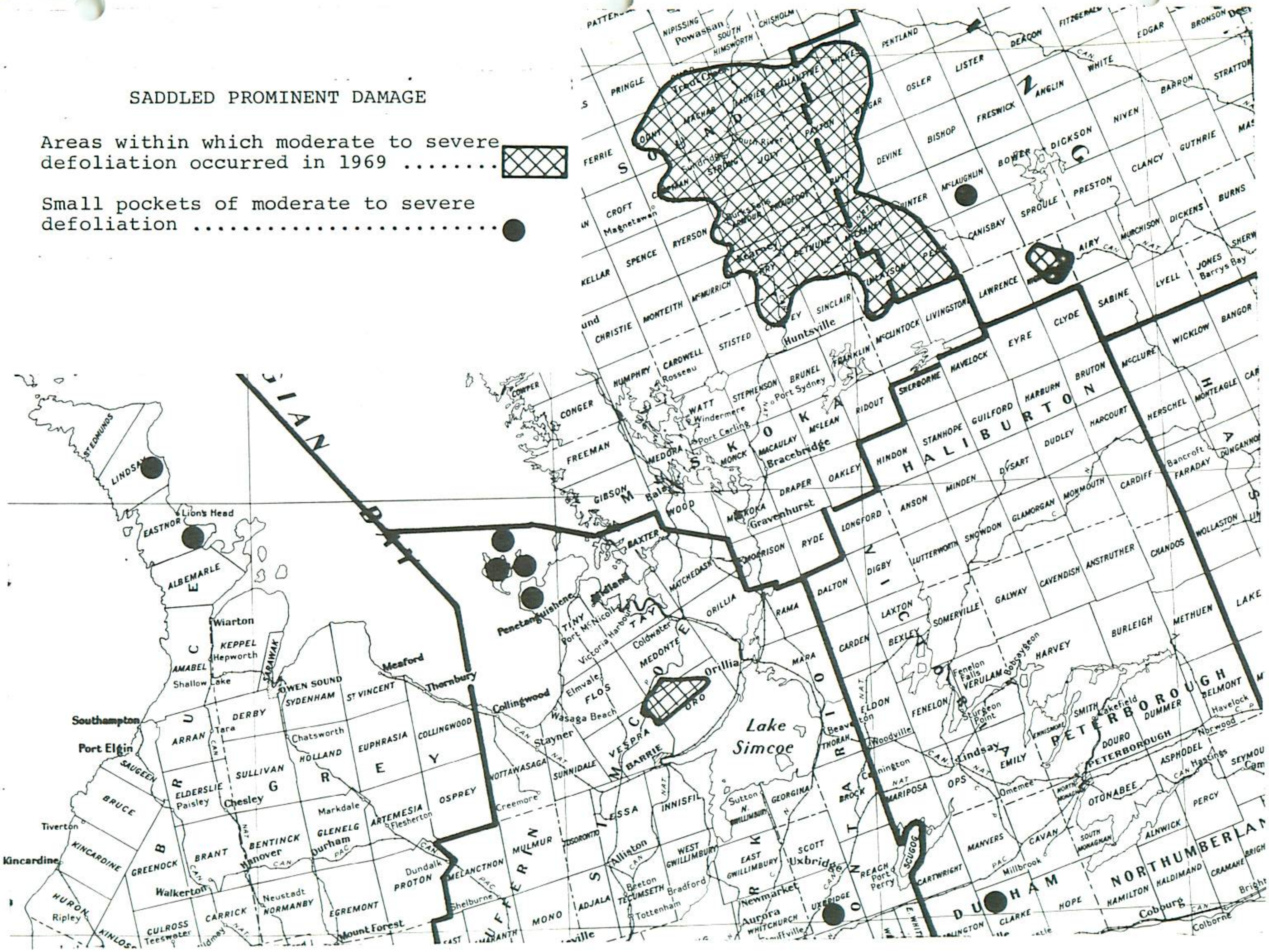
Moderate .....

Light .....

SADDLED PROMINENT DAMAGE

Areas within which moderate to severe defoliation occurred in 1969 ....

Small pockets of moderate to severe defoliation ....



WIND AND HAIL DAMAGE

Hail damage on the stems
and branches of trees

Typical severe windthrow