Status of Insects in the Lake Huron District

Jansons, V.

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(Forest Research Laboratory, Ontario Region)

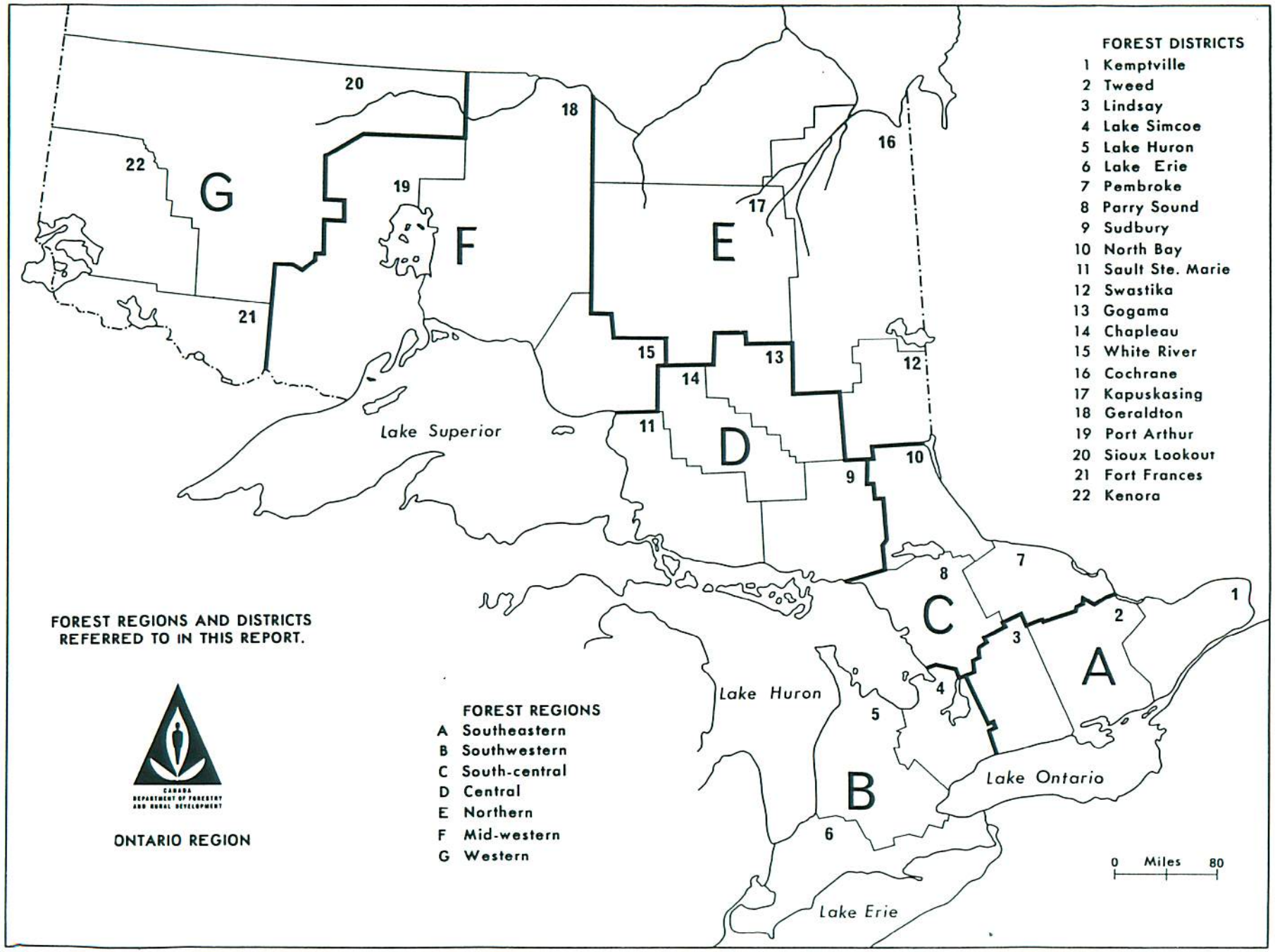
1967

Information Report No.	Subject	Author
O-X-57	Forest Insect & Disease Surveys --Lindsay District	M. J. Thomson
O-X-58	--Tweed District	F. Livesey
O-X-59	--Kemptville District	M. J. Applejohn
O-X-60	--Lake Simcoe District	R. L. Bowser
O-X-61	--Lake Erie District	G. T. Atkinson
O-X-62	--Lake Huron District	V. Jansons
O-X-63	--North Bay District	L. S. MacLeod
O-X-64	--Parry Sound District	C. A. Barnes
O-X-65	--Pembroke District	R. A. Trieselmann
O-X-66	--Sault Ste. Marie District	H. J. Weir
O-X-67	--Sudbury District	G. W. Cameron
O-X-68	--Chapleau District	D. Ropke
O-X-69	--Gogama District	W. Ingram
O-X-70	--Cochrane District	H. R. Foster
O-X-71	--Kapuskasing District	F. F. Foreman
O-X-72	--Swastika District	H. R. Foster L. S. MacLeod W. Ingram
O-X-73	--Port Arthur District	K. C. Hall
O-X-74	--Geraldton District	K. C. Hall D. C. Constable
O-X-75	--White River District	D. C. Constable
O-X-76	--Sioux Lookout District	P. E. Buchan
O-X-77	--Kenora District	P. E. Buchan J. Hook
O-X-78	--Fort Francis District	J. Hook

TABLE OF CONTENTS

REPORTS OF FOREST RESEARCH TECHNICIANS

Ontario


FOREST DISTRICTS
1 Kemptville
2 Tweed
3 Lindsay
4 Lake Simcoe
5 Lake Huron
6 Lake Erie
7 Pembroke
8 Parry Sound
9 Sudbury
10 North Bay
11 Sault Ste. Marie
12 Swastika
13 Gogama
14 Chapleau
15 White River
16 Cochrane
17 Kapuskasing
18 Geraldton
19 Port Arthur
20 Sioux Lookout
21 Fort Frances
22 Kenora
FOREST REGIONS AND DISTRICTS REFERRED TO IN THIS REPORT.
FOREST REGIONS
A Southeastern
B Southwestern
C South-central
D Central
E Northern
F Mid-western
G Western
Lake Superior
Lake Huron
Lake Ontario
Lake Erie
0 Miles 80
CANADA DEPARTMENT OF FORESTRY AND RURAL DEVELOPMENT
ONTARIO REGION

FOREWORD

Population levels of the spruce budworm increased sharply in widely-separated parts of Ontario in 1967. Heavy infestations occurred in the Burchell Lake area in Port Arthur District and in woodlots in parts of Pembroke, Tweed and Kemptville districts. A light infestation persisted east of Chapleau in the Central Forest Region. The Burchell Lake infestation is of particular concern because of the nature of the forest in that area. Stands currently infested, as well as those to the north as far as Lac Des Mille Lacs, contain considerable mature balsam fir and white spruce which are highly susceptible to attack by the spruce budworm.

For the second consecutive year, weather conditions during May had a pronounced effect on infestations of the forest tent caterpillar. Mortality of eggs and newly-emerged larvae greatly reduced population levels of this pest. The only major areas of infestation remaining in the Province were in the eastern part of Fort Frances District and the southern part of Sault Ste. Marie District.

Two species of sawflies were of major importance in pine plantations. The European pine sawfly continued to extend its range in southeastern Ontario and two new centers of infestation were found on Manitoulin Island. The red-headed pine sawfly caused severe defoliation in red pine shelterbelts and plantations at numerous locations in the central and southern parts of the Province.

Intensive surveys were continued to determine the distribution and incidence of Dutch elm disease and Scleroderris-canker of pine. The discovery of Ceratocystis ulmi (Buism.) C. Moreau in Sault Ste. Marie constituted a marked westward extension of the range of the disease caused by this pathogen. Scleroderris-canker of pine continued to cause severe losses of young red pine and, to a lesser extent, jack pine in numerous plantations in central and northern Ontario. By comparison, damage in southern Ontario was negligible.

Diseases of spruce were caused by Cytospora kunzei Sacc. and Polyporus tomentosus Fr. at widely-separated points in southern Ontario and pockets of infection of Fomes annosus (Fr.) Cke. root-rot persisted in several red pine plantations in Lindsay, Lake Simcoe and Lake Erie districts. Details on the distribution and damage caused by these and other forest diseases and insects are contained in the regional and district sections of this report.

J. E. MacDonald

STATUS OF INSECTS IN THE LAKE HURON DISTRICT

V. Jansons

Cedar Leaf Miners, Argyresthia thuiella Pack,
Pulicalvaria thujaella Kft.

Heavy infestations of these leaf miners continued to cause discolouration and thinning of white cedar crowns in many parts of the district. Considerable branch tip mortality occurred mainly in Grey, Bruce and Wellington counties. The damage was less conspicuous in the southern part of the district.

Spruce Budworm, Choristoneura fumiferana (Clem.)

Populations of this insect increased sharply in the northern part of Bruce Peninsula. Scattered pockets of light to medium infestation were observed in Lindsay and St. Edmunds townships. Defoliation of white spruce was about 43 and 50 per cent at sample points in Lindsay and St. Edmunds townships respectively. Twenty-seven per cent defoliation was recorded on balsam fir in St. Edmunds Township. Egg mass surveys in these areas indicated that a sharp decline in population level will occur in 1968. A light infestation persisted for the fourth consecutive year on white spruce in the Grey Main Tract in Glenelg Township and in the Macton Tract in Wellesley Township (see map).

Larch Casebearer, Coleophora laricella (Hbn.)

A general decline in population levels of this insect was observed in the district for the second consecutive year. The sharpest decline occurred at a permanent sample point in Amabel Township where the number of larvae per 18-inch branch tip decreased from 13.2 in 1966 to 0.9 in 1967 (Table 3). However, light to medium populations of casebearers persisted in European larch plantations and in tamarack stands at numerous locations in the district. The total number of larvae on two 18-inch branch tips from European larch varied from 15 to 43 at four other sample points.

TABLE 3

Summary of Larch Casebearer Larval Counts at Six Points in the Lake Huron District from 1965 to 1967

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

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of larvae per branch tip		
		1965	1966	1967
Glenelg	5	4.4	9.5	6.5
Bentinck	5	7.0	6.1	4.2
Blandford	6	27.7	6.1	2.3
S. Dumfries	7	22.6	3.7	1.7
Amabel	4	21.4	13.2	0.9
Lindsay	5	5.1	1.2	0

Walnut Caterpillar, Datana integerrima G & R

Populations of the walnut caterpillar remained at about the same level as in 1966. Severe defoliation of single and small groups of trees continued for the second consecutive year in Stephen and Hay townships. Completely defoliated trees were also observed along Highway 24 south of Galt, in the Glen Morris area in S. Dumfries Township and in Eramosa Township. Light to medium defoliation occurred along Highway 21 in Stanley Township, in North Norwich Township and at several other points in the district. Populations declined to a low level in the Thamesford area, East Nissouri Township, where severe defoliation was reported in 1966.

European Spruce Sawfly, Diprion hercyniae (Htg.)

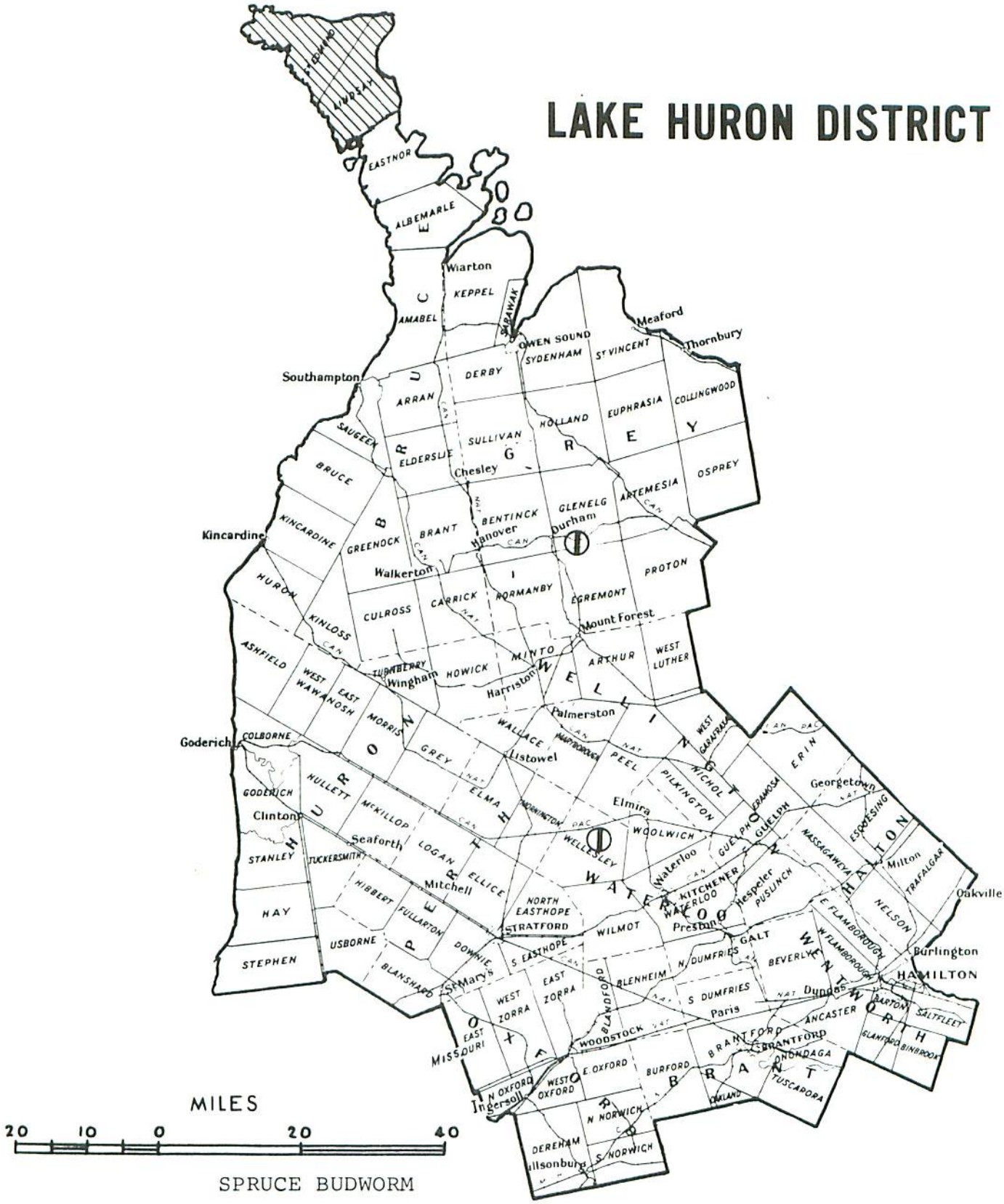
Population levels of this insect declined at all sample points in the district. The most notable decline occurred at Dorcas Bay in St. Edmunds Township, where the total number of larvae per 15-tray sample decreased from 147 in 1966 to 10 in 1967 (Table 4).

TABLE 4

Summary of European Spruce Sawfly Larval Counts Taken from White Spruce Trees in the Lake Huron District from 1965 to 1967

Location (township)	Av. d.b.h. of sample trees in inches	Total no. of larvae per 15-tray sample		
		1965	1966	1967
E. Wawanosh	7	-	-	42
Euphrasia	4	27	33	21
Lindsay	8	-	-	16
St. Edmunds	7	78	147	10
Albemarle	6	62	62	6
Holland	5	30	11	3

LAKE HURON DISTRICT



SPRUCE BUDWORM

Area and locations where infestations were observed in 1967

Legend

Light infestation .....

Medium infestation .....

Introduced Pine Sawfly, Diprion similis (Htg.)

Populations of this insect increased in St. Vincent Township. At five other sampling stations the numbers of larvae declined (Table 5).

TABLE 5

Summary of European Pine Sawfly Counts in the Lake Huron District from 1965 to 1967

Location (township)	Host	Av. d.b.h. of sample trees in inches	Total no. of larvae per 15-tray sample		
			1965	1966	1967
St. Vincent	ScP	6	6	8	18
Woolwich	wP	6	11	45	12
Kepell	ScP	7	16	17	5
Euphrasia	ScP	5	6	13	5
Minto	wP	6	1	3	1
Artemesia	wP	6	8	27	0

Maple Trumpet Skeletonizer, Epinotia aceriella Clem.

A medium infestation of this insect occurred on sugar maple in a 50-acre woodlot in Colborne Township. Larval populations were highest on understory trees and on the lower crowns of large maples. A light infestation was observed on small shaded understory trees in an extensive woodlot in Wilmot Township.

The larva of this insect spins a silken web on the underside of a leaf causing it to fold. In this fold it forms a 2-inch long black trumpet-like frass tube. The larva feeds from this tube skeletonizing the area covered by the web, and this causes the leaf to crumple.

Eastern Pine Shoot Borer, Eucosma gloriola Heinr.

Populations of this insect declined sharply in plantations in Brant, Ashfield and Puslich townships. The sharpest decline was observed in the Stingall Tract in Brant Township, where leader damage decreased from 35 per cent in 1966 to 4 per cent in 1967 (Table 6). New infestations were observed on white pine in Cox Tract in Nassagaweya Township, and in Ayton Tract in Normanby Township, where 76 and 65 per cent respectively of the trees examined were infested. Light attack was observed at several other plantations in the district.

TABLE 6

Summary of Shoot Damage by the Eastern Pine Shoot Borer on White Pine Trees in the Lake Huron District from 1965 to 1967

Location (township)	Average height of trees in feet	Per cent of trees infested			Av. no. of attacks per infested tree			Per cent of leaders attacked		
		1965	1966	1967	1965	1966	1967	1965	1966	1967
Ashfield	15	80	100	68	4	12	3	5	23	20
Brant	10	100	100	32	12	14	2	40	35	4
Puslinch	12	100	100	16	8	4	1	15	4	4
Nassagaweya	15	-	-	76	-	-	2	-	-	20
Normanby	8	-	-	65	-	-	3	-	-	30

Jack-pine Needle Miner, Exoteleia pinifoliella (Cham.)

Heavy infestations continued for the second consecutive year in jack pine plantings in the McIntyre Tract in Kinloss Township, and in the Ayton Tract in Normanby Township. Infested trees suffered up to 80 per cent mining of old needles. Light needle mining was observed in Holland and Blandford townships.

Saddled Prominent, Heterocampa guttivitta Wlk.

In 1967 three infestations of the saddled prominent occurred in the northern part of the district. The heaviest infestation was observed in a 75-acre stand of sugar maple at the Camp Meaford tank range in St. Vincent Township where defoliation of dominant trees ranged from 80 to 100 per cent and all the understory trees were completely defoliated. No noticeable defoliation was observed on ash, white elm, and basswood trees which were scattered through the infested stand. Light-to-moderate defoliation of sugar maple was observed in an extensive mixed hardwood stand along the Bruce Trail east of Oxenden in Keppel Township, and southeast of Lions Head in Eastnor Township.

Ontario survey records show that only three sizable infestations of this insect had occurred previously.

Fall Webworm, Hyphantria cunea Dru.

A light infestation persisted for the second consecutive year on small scattered white elm trees along Highway 97 between Bright and Hickson in Blandford and East Zorra townships. Single scattered tents were common on roadside trees along Highway 24 between Guelph and Hespeler and in the Galt-Paris area. Small numbers of tents were observed elsewhere in the district. The principal hosts were white elm, cherries and Manitoba maple.

Eastern Tent Caterpillar, Malacosoma americanum F.

Although the numbers of colonies declined in permanent sample plots (Table 7). Light infestations and single scattered colonies were common on small cherry shrubbery throughout the district.

TABLE 7

Summary of Eastern Tent Caterpillar Colony Counts at Six Points in the Lake Huron District from 1965 to 1967

Location (township)	Host	No. of colonies per mile of roadside		
		1965	1966	1967
Egremont	ecCh	-	-	32
Brant	ecCh	84	54	16
Arran	ecCh	38	12	13
Sullivan	bCh	23	6	7
Amabel*	ecCh	12	23	5
Guelph	ecCh	19	17	3

* Square chain plot.

Balsam-fir Sawfly, Neodiprion abietis complex

The small pockets of light to heavy infestations reported in 1966 on balsam fir in Glenelg, Artemesia and St. Edmunds townships declined to very low intensity. A light infestation persisted in the Greenough Point road area in Lindsay Township, where small numbers of colonies were observed on scattered trees.

European Pine Sawfly, Neodiprion sertifer, Geoff.

Following several years of relatively heavy infestations, a general decline in population levels was observed in 1967. In the quantitative sample plots, the sharpest decline occurred on Scots pine in the Rodgers Tract in E. Wawanosh Township where the numbers of colonies per tree decreased from an average of 14 in 1966 to 2 in 1967 (Table 8). The highest populations were observed in a clump of young Scots pine in a plantation one mile south of Sauble Falls in Amabel Township and on jack pine at a location in Ellis Township. The defoliation in these infestations ranged from 50 to 90 per cent. At all other sample points in the district population levels of the insect were low and defoliation was negligible.

TABLE 8

Summary of European Pine Sawfly Colony Counts and Degree of Infestation in the Lake Huron District from 1965 to 1967

Note: Counts based on examination of 10 trees at each location.

Location (township)	Average height of trees in feet	Av. no. colonies per infested tree			Per cent of trees infested in 1967	Degree of infestation in 1967
		1965	1966	1967		
Stanley	12	1	2	2	50	Light
E. Wawanosh	20	12	14	2	40	"
Goderich	10	6	10	1	10	"
Brant	15	2	2	0	0	Nil
Nassagaweya	7	-	7	2	60	Light
Sullivan	20	-	1	2	30	"
Holland	12	-	8	0	0	Nil

White Pine Weevil, Pissodes strobi Peck.

A heavy infestation persisted on white pine in a section of Grey Main Tract, Glenelg Township, where 33 per cent of the trees examined were infested. In the Moir Tract in Culross Township the incidence of infested trees declined from 24 per cent in 1966 to 8 per cent in 1967 (Table 9).

TABLE 9

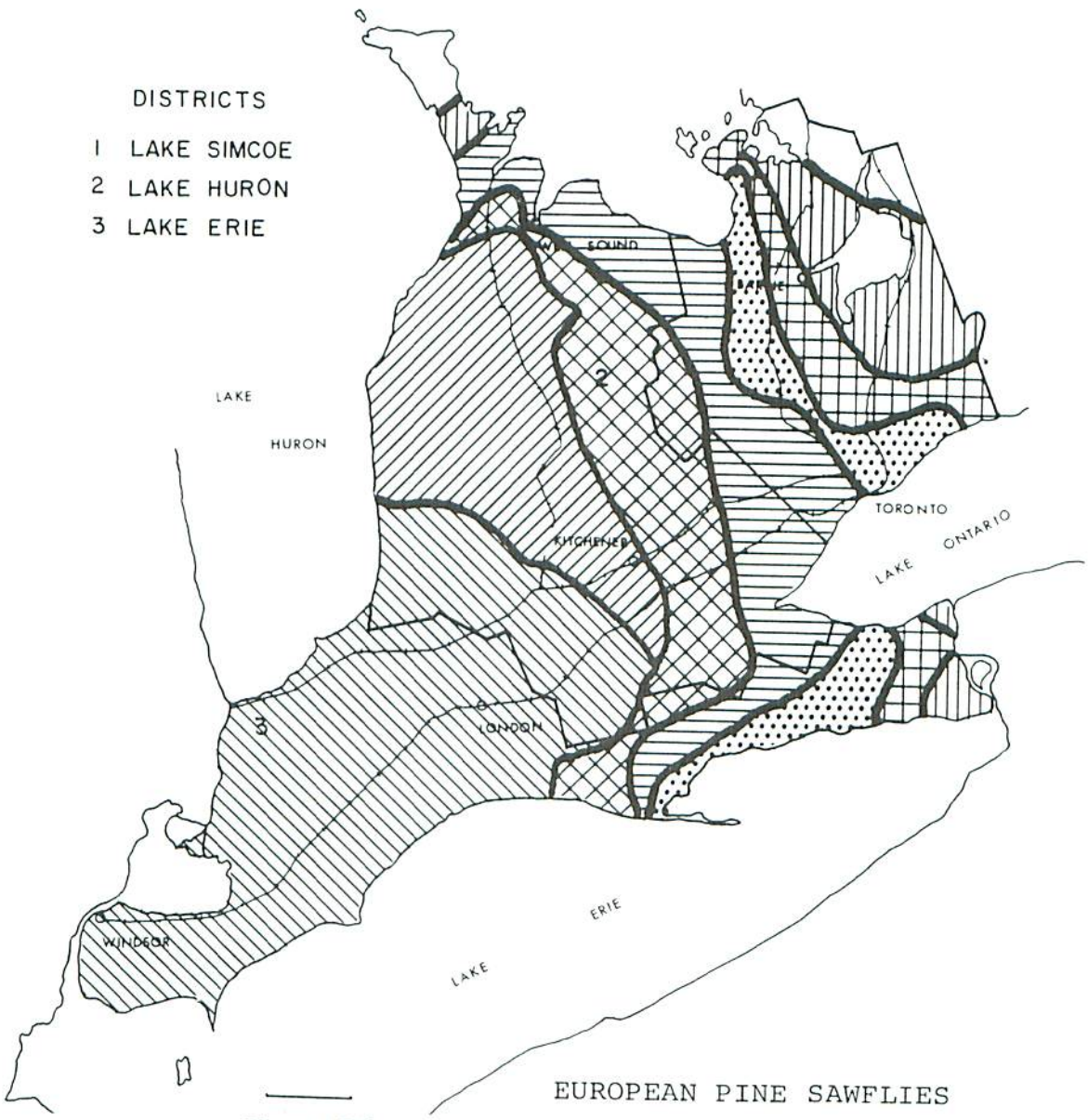
Summary of Shoot Damage by the White Pine Weevil in Plantations at Five Points in the Lake Huron District from 1965 to 1967

Location (township)	Av. d.b.h. of sample trees in inches	Per cent of trees infested		
		1965	1966	1967
Glenelg	5	-	40	33
Culross	4	15	24	8
Kinloss	2	-	-	6
Brant	6	4	2	3
Sullivan	1	-	-	1

Larch Sawfly, Pristiphora erichsonii Htg.

Populations of this insect declined to low levels in St. Edmunds, Lindsay, Eastnor, Albemarle and Amabel townships where pockets of light to heavy infestation were reported in 1966. However, in 1967 a new medium infestation occurred in a 10-acre European larch plantation in South Dumfries Township where the defoliation was estimated at 30 per cent. Light defoliation of scattered tamarack was observed in the Bells Lake area in Holland Township, and south of Ferndale in Eastnor Township (see map).

SOUTHWESTERN REGION



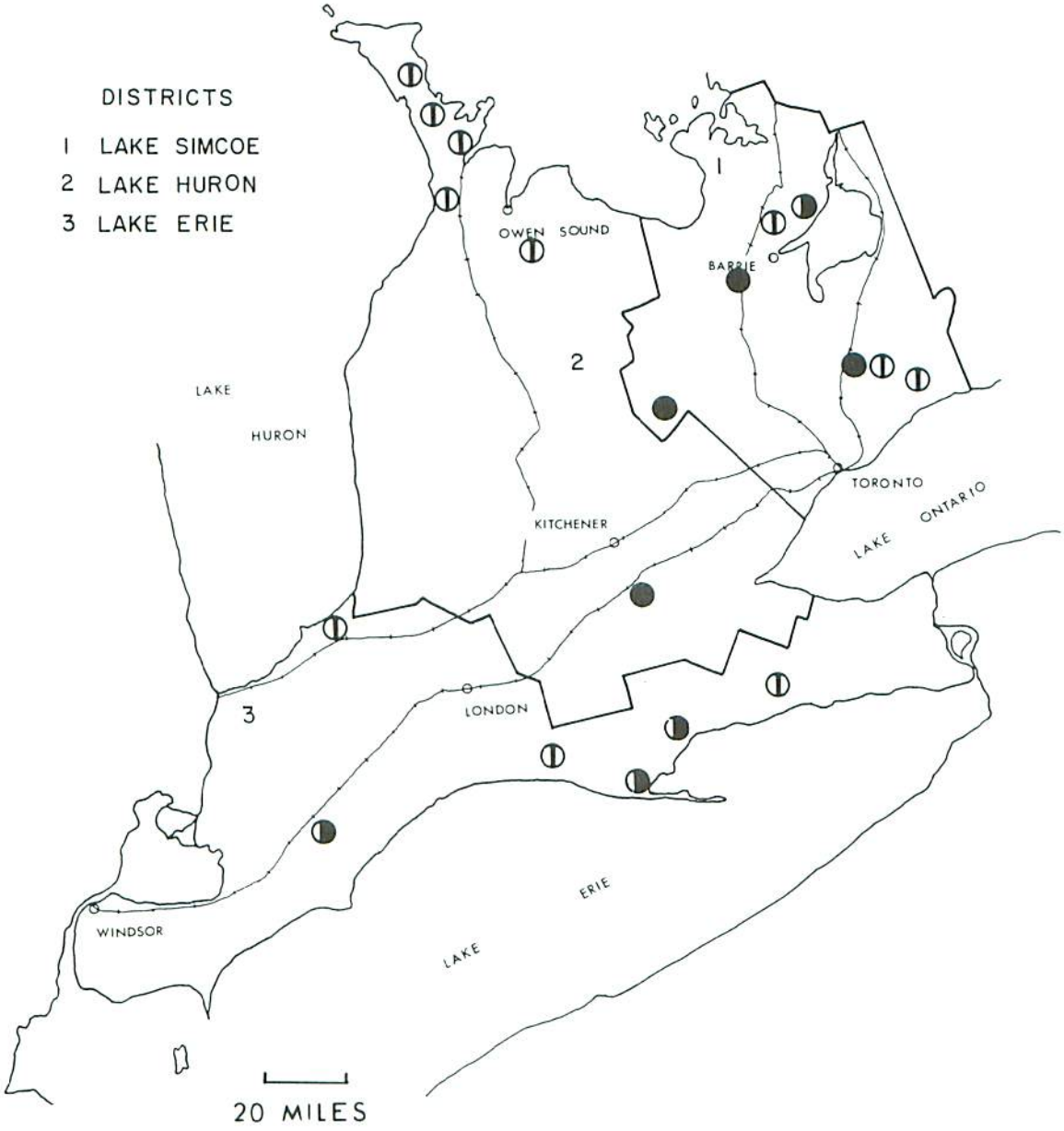
EUROPEAN PINE SAWFLIES

Boundaries of infestation
from 1950 to 1967

Legend

1950 ...
1954 ...
1956 ...
1959 ...
1961 ...
1963 ...
1967 ...

SOUTHWESTERN REGION



LARCH SAWFLY

Locations where infestations were observed in 1967

Legend

Light infestation .....

Medium infestation .....

Heavy infestation .....

TABLE 10

Summary of Miscellaneous Insects Collected in Lake Huron District in 1967

Insect	Host(s)	Remarks
Acleris variana Fern.	wS	Small numbers in beating samples
Acrobasis juglandis LeBar.	Bu	Light casebearer population, Saugeen and Blandford townships
Acrobasis tricolorella Grt.	ecCh	Rare insect
Actias luna Linn.	I	Small numbers
Adelges abietis Linn.	wS,nS	High incidence of galls, Rockton and Brant Tract
Agromyza aristata Mall. (ulmi Frost)	wE	Light to moderate leaf mining, Main Tract, Glenelg Township
Alsophyla pometaria Harr.	wE,tA	Several lightly infested trees, Greenock Township
Anacamptodes vellivolata Hlst.	wP,rP	Small numbers
Anatis mali Say	bF	Predators found at two sampling points
Anisota senatoria J. E. Smith	wO	Light defoliation on several roadside trees, Blenheim and S. Dumfries townships
Anomoea laticlavia Forst.	Bu	Light feeding on a clump of trees, Blandford Township
Anoplonyx luteipes Cress.	tL	Small numbers
Aphrophora parallela Say	jP,ScP	Light population, Colborne Township, small numbers common elsewhere
Archips cerasivoranus Fitch	ecCh	One pocket of heavy infestation in St. Edmunds Township, elsewhere populations low
Arge pectoralis Leach	wB	Scattered colonies common St. Edmunds Township
Argyresthia oreasella Clem.	ecCh	Small numbers of shoot borers
Argyresthia pygmaeella Hbn.	W	Several heavily infested clumps, Lindsay Township

TABLE 10 (continued)

Insect	Host(s)	Remarks
Callirhytis modesta O. & S.	rO	Light incidence of galls S. Dumfries Township
Cecidomyia reeksi Vock.	jP	Light twig mortality continued in Kepell and Kinloss townships
Cenopis pettitana Rob.	Ba	Small numbers of leaf rollers, S. Dumfries Township
Coleophora betulivora McD.	wB	Endemic numbers common in Lindsay Township
Coleophora ulmifoliella McD.	wE	One heavily infested tree, Saugeen Township
Creosus latitarsus Nort.	wB	One colony
Depressaria betulella Busck.	wB	Light population, Lindsay Township
Dioryctria disclusa Heinr.	Scp,jP	High incidence of infested cones on a group of Scots pine in Amabel Township, light on jack pine in Amabel and Woolwich townships
Diprion frutetorum F.	ScP	General population decline; highest count eight larvae per 15-tray sample
Ectoedemia populella Busck.	tA	Light population, Puslinch Township
Epinotia lindana Fern.	Do	High incidence of leaf tiers on roadside shrubs, Amabel Township
Epinotia solandriana Linn.	bPo,wB	Medium population of leaf rollers, Lindsay Township
Erannis tiliaria Harr.	sM,wE	Small numbers
Eriocampa ovata Linn.	Al	Heavy localized defoliation, Lindsay Township
Eriophyes betulae Steb.	wB	High incidence of witches' brooms caused by this insect on one tree at Inglis Falls
Erynnis icelus Scud. & Burg.	Hon	Small numbers
Exoteleia dodecella Linn.	ScP,jP	General population decline; 3 per cent of buds infested in a small plantation at Roseville, small numbers in Blenheim and Egremont townships

TABLE 10 (continued)

Insect	Host(s)	Remarks
Fenusa pusilla Lep.	wB	Light incidence of leaf miners, Amabel and Erin townships
Fenusa ulmi Sund.	wE	Small pockets of severe leaf mining, Sullivan, Artemesia and Puslinch townships
Fumaria casta Pall.	wAs	Small numbers in Puslinch and Nichol townships, first record for the district
Galerucella luleola Mull.	wE	Severe leaf skeletonizing on scattered large trees in the City of Guelph
Hedia chionosema Zell.	Haw	Leaf tiers common, Sullivan Township
Heterarthrus nemoratus Fall.	wB	Light incidence, Lindsay Township
Ipimorpha pleonectusa Grt.	tA	Small numbers
Leucoptera albella Cham.	bPo	Numerous on one small tree
Lithocolletis aceriella Clem.	sM	Small numbers, N. Dumfries Township
Lithocolletis betulivora Wlshm.	wB	Small numbers, Edmunds Township
Lithocolletis hamadryadella Clem.	rO	Light incidence on large trees, S. Dumfries Township
Malacosoma disstria Hbn.		Seven male and 2 female adult moths collected in light trap
Mindarus abietinus Koch.	bF	Aphids caused curling of new shoots on numerous trees in Amabel and Sullivan townships
Monochamus scutellatus Say	wS	Found in log traps, Lindsay Township
Monoctenus fulvus Nort.	eCe	Small numbers in beating samples
Moodna ostrinella Clem.	Su	Larvae feed in flower clusters; first district record
Nematus fulvicrus Prov.	W	Numerous colonies on roadside shrubs at one location, Egremont Township

TABLE 10 (continued)

Insect	Host(s)	Remarks
Nematus limbatus Cress.	W	Three colonies
Neodiprion pratti banksianae Roh.	jP	Eight colonies on 10 sample trees in Hewgill Tract, Euphrasia Township
Neodiprion virginianus complex	jP	Pocket of light infestation at Emmet Lake road, St. Edmunds Township
Neurotoma fasciata (Nort.)	bCh	Four colonies on one tree, Beverly Township
Nymphalis antiopa L.	W,tA	Several completely defoliated small trees in Lindsay and Kepell townships
Pareophora minuta MacG.	wAs	Light defoliation on several small trees, Blandford Township
Phyllobius oblongus Linn.	bO,sM	Light defoliation of bur oak in Grey Main Tract, beetles very numerous on several sugar maple trees in Holland Township
Phyllocolpa agama (Roh.)	W	Light populations common on fringe shrubs, Bentinck Township
Pikonema alaskensis Roh.	wS	General population decline; small numbers in Grey Main Tract and in Victory Tract, counts negative at six other permanent sample points
Pineus strobi Htg.	wP	Numerous heavily infested trees in one block of pine plantings in Grey Main Tract
Pristiphora geniculata (Htg.)	aMo	Light to moderate defoliation on scattered trees, Glenelg, Nichol, Sullivan and Colborne townships
Profenusa lucifex Ross	wO	Small numbers, Nelson Township
Profenusa thomsonii (Konow)	wB	Light incidence of leaf miners, Lindsay Township

TABLE 10 (concluded)

Insect	Host(s)	Remarks
Rhabdophaga swainei Felt	wS	2.3 per cent of buds infested in Markdale Tract, very light incidence in Victory Tract
Sciaphila duplex Wlshm.	tA	Small numbers common in Sullivan, Kinloss and Lindsay townships
Scoliopteryx libatrix Linn.	lPo	Small numbers
Semiothisa bicolorata Fabr.	jP	Beating samples
Sparganothis directana Wlk.	ecCh	One lightly infested shrub
Spilonota lariciana Heinr.	eL	Light population at Sandy Hill Tract
Sterictiphora sericea (Nort.)	Haw	One small colony; rare insect
Thera juniperata L.	J	Light populations at several sampling points
Tischeria castaneaeella	rO	Small numbers
Trichiocampus irregularis (Dyar)	W	Scattered colonies, St. Vincent Township
Zale undularis Dru.	b. locust	Small numbers
Zeiraphera canadensis Mut. & Free.	wS	High incidence of infested shoots on open grown and fringe trees through Lindsay and St. Edmunds townships. Plantations lightly damaged in E. Wawanosh and Colborne townships