Status of Insects in the Lake Erie District

Trinnell, J.R.

Information Report O-X-40
(Forest Research Laboratory, Ontario Region)

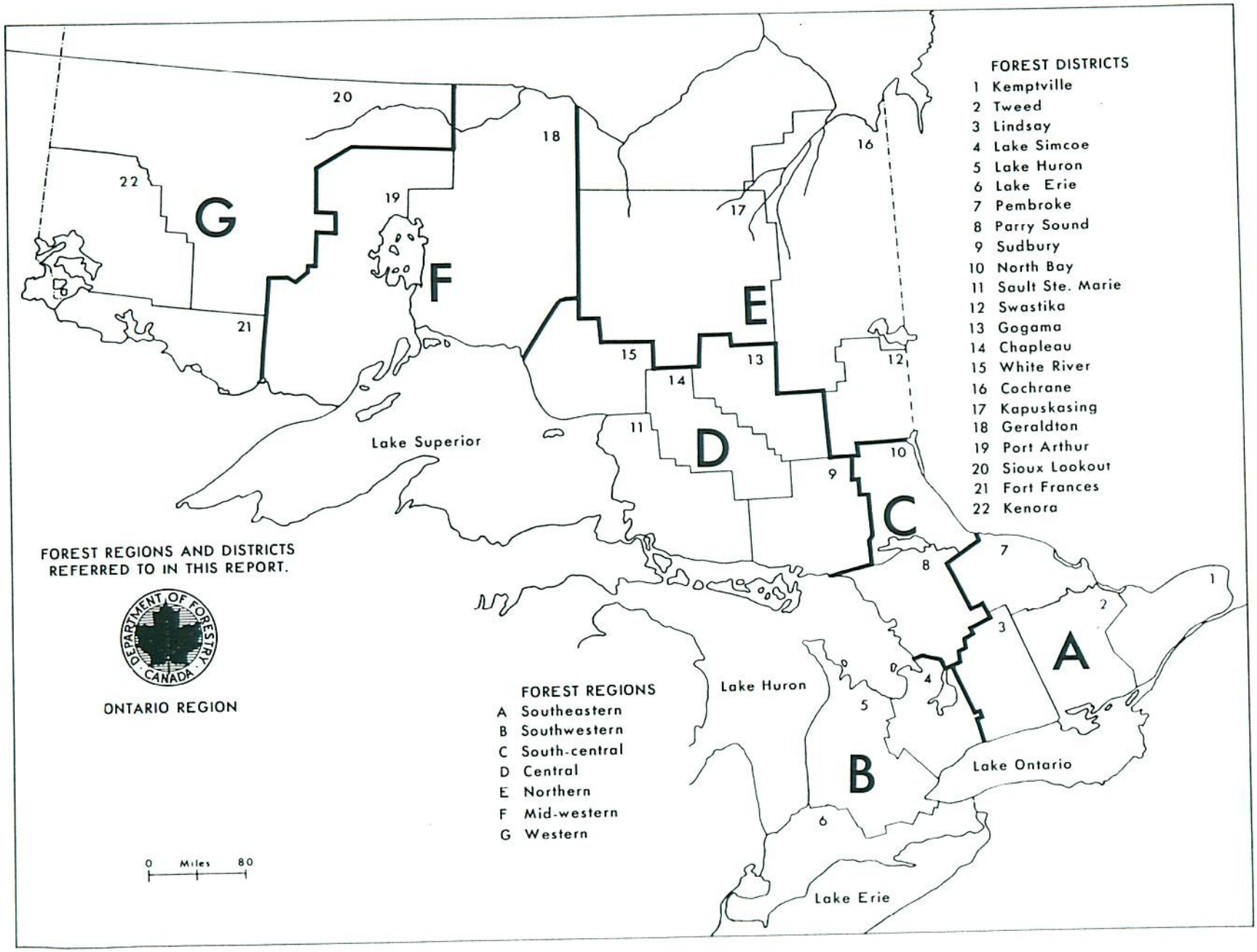
Information Report No.	Subject	Author
O-X-34	Forest Insect & Disease Surveys	
	--Lindsay District	W. J. Miller
O-X-35	--Tweed District	F. Livesey
O-X-36	--Kemptville District	J. Hook
O-X-37	--Pembroke District	R. A. Trieselmann
O-X-38	--Lake Simcoe District	A. A. Harnden
O-X-39	--Lake Huron District	R. L. Bowser
O-X-40	--Lake Erie District	J. R. Trinnell
O-X-41	--North Bay District	L. S. MacLeod
O-X-42	--Parry Sound District	C. A. Barnes
O-X-43	--Sault Ste. Marie District	H. G. McPhee
O-X-44	--Sudbury District	J. R. McPhee
O-X-45	--Chapleau District	D. Ropke
O-X-46	--Gogama District	W. Ingram
O-X-47	--White River District	D. C. Constable
O-X-48	--Cochrane District	H. R. Foster
O-X-49	--Kapuskasing District	G. T. Atkinson
O-X-50	--Swastika District	M. J. Applejohn
O-X-51	--Port Arthur District	K. C. Hall
O-X-52	--Geraldton District	V. Jansons
O-X-53	--Sioux Lookout District	P. E. Buchan
O-X-54	--Kenora District	H. J. Weir
O-X-55	--Fort Francis District	M. J. Thomson

TABLE OF CONTENTS

REPORTS OF FOREST RESEARCH TECHNICIANS

Ontario

* Regional Supervisors


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.
DEPARTMENT OF FORESTRY CANADA
ONTARIO REGION
FOREST REGIONS
A Southeastern
B Southwestern
C South-central
D Central
E Northern
F Mid-western
G Western
0 Miles 80
Lake Superior
Lake Huron
Lake Ontario
Lake Erie

FOREWORD

J. E. MacDonald

A prolonged period of drought, extending from May until August, seriously affected the growth and survival of forest stands on shallow sites and in plantations, particularly in central and southern Ontario. This was evidenced in August when hardwoods on rocky sites in many areas turned brown and shed their foliage. Serious losses of conifers planted in 1966 were reported in the Sault Ste. Marie, Lake Huron, Lake Simcoe and Lindsay districts.

Intensive surveys were carried out in 1966 to determine the distribution and incidence of Scleroderris canker of pine and of Dutch elm disease. These revealed that Scleroderris canker is widely distributed in northern Ontario. Incidence and tree mortality was highest in young red and jack pine plantations, however, significant losses of jack pine reproduction were also observed in several areas. Incidence of the disease was low in southern Ontario. Dutch elm disease is well established throughout southern Ontario and in localized areas in North Bay and Sudbury districts in northern Ontario. The incidence of infection was particularly high in the Toronto, London and Windsor areas. Over 50 per cent of the elm trees in many areas in southwestern Ontario were infected and the disease has taken a heavy toll of trees in older areas of infection.

Noteworthy changes in the extent and intensity of infestations of the forest tent caterpillar and jack pine budworm occurred in 1966. Weather conditions in the spring brought about a collapse of the forest tent caterpillar outbreak that had occurred over a vast area in Sioux Lookout, Kenora and Port Arthur districts in recent years. Heavy infestations persisted in Fort Frances District and in numerous areas in central and southeastern Ontario, but no outstanding changes in their extent and intensity occurred. Forest tent caterpillar defoliation forecasts for 1967 are contained in the district reports that follow.

Jack pine budworm infestations were reported in three widely-separated parts of Ontario. The largest of these occurred in the western part of Fort Frances and Kenora districts. Pockets of infestation occurred in the southern part of Sault Ste. Marie District and on Manitoulin Island.

The European pine sawfly continued to be a serious pest in pine plantations in southern Ontario. Since its discovery in a Scots pine plantation on Manitoulin Island in 1965, it has been found in five additional plantations on the Island. The results of control measures using virus sprays to contain the sawfly in this northern location will be followed with interest in 1967.

Expansion of the forest research program of the Department of Forestry and Rural Development in Sault Ste. Marie and the establishment of new positions in the Insect and Disease Survey Section has resulted in many changes of duties for Survey technicians. Five new district technicians will be required for the 1967 field season and numerous district re-assignments will be made. A list of technicians and their district assignments will be issued to key personnel of the Department of Lands and Forests and Industry early in the field season.

STATUS OF INSECTS IN THE LAKE ERIE DISTRICT

J. R. Trinnell

Ugly Nest Caterpillar, Archips cerasivoranus Fitch

A heavy infestation occurred at Fingal airdrome in Southwold Township, with over 50 tents in each of two pockets of eastern choke cherry shrubbery. Heavy infestations that occurred in Haldimand and Welland counties in 1965 declined to light intensity in 1966.

Moderate defoliation was observed at one point in Dawn Township and light infestations occurred at several points in the district. Medium infestations recorded in 1965 in Point Pelee National Park and John E. Pearce Provincial Park declined to light intensity in 1966.

Jack-pine Resin Midge, Cecidomyia reeksi Vock.

A medium infestation of this pitch midge occurred on several jack pine trees in Cayuga North Township. Over 250 branch tips on one 15-foot tree were killed by repeated attacks at this location. A medium infestation reported on a jack pine hedgerow west of Strathroy in Caradoc Township in 1965 declined to light intensity in 1966.

Larch Casebearer, Coleophora laricella (Hbn.)

Notable increases in population levels of this insect were recorded on European larch trees in Yarmouth Township. At the Kettle Point Indian reservation populations tripled compared with 1964. Counts were low at the other sample points in the district (Table 6).

Mass collections totalling over 150 larvae and pupae were submitted to the laboratory from Bosanquet, North Dorchester and Yarmouth townships for parasite studies.

TABLE 6

Summary of Larch Casebearer Counts in Lake Erie District from 1964 to 1966

Location (township)	Host	Av. d.b.h. in inches	Average number of larvae per 18-inch tip		
			1964	1965	1966
Bosanquet	tL	10	5.0	5.9	15.3
Caradoc	tL	9	0.9	7.5	1.8
Charlotteville	eL	10	1.0	0	0.5
N. Dorchester	tL	8	5.5	8.2	12.5
S. Walsingham	eL	10	0.4	0.2	0.9
Yarmouth	eL	12	0.7	1.5	16.4

Walnut Caterpillar, Datana integerrima G. & R.

Light to heavy infestations of the walnut caterpillar occurred on single and small groups of trees at many points in the district. (Table 7). Numerous walnut trees from Dogsnest to Selkirk were severely defoliated and medium to heavy infestations were observed commonly from Hemlock to Copenhagen in the central part of the district.

The incidence of attack on hickory trees was higher than in recent years, particularly in the Sombra area of Lambton County.

TABLE 7

Summary of Walnut Caterpillar Defoliation Estimates in Lake Erie District from 1964 to 1966

Note: Counts were based on estimates of defoliation of ten black walnut trees at each point.

Location (township)	Av. height in feet	Approx. per cent defoliation 1964	1965	1966
Dunwich	25	10	15	40
Enniskillen	45	5	15	10
McGillivray	15	55	80	20
Mosa	22	10	55	20
South Cayuga	20	0	3	0
Tilbury North	30	15	90	70
Wainfleet	22	1	20	25
Windham	25	3	10	1

Yellow-necked Caterpillar, Datana ministra (Drury)

Medium to heavy infestations of this insect occurred at many points in Lambton and Middlesex counties, particularly on hawthorn and white elm trees. Moderate defoliation was observed on white elm along roadsides in the Hagersville-Jarvis area. Populations were light in the remainder of the district.

Nursery Pine Sawfly, Diprion frutetorum Lec.

Populations of this sawfly were light throughout the district (Table 8).

TABLE 8

Summary of Nursery Pine Sawfly Larval Counts in Lake Erie District in 1965 and 1966

Location (township)	Host	Av. d.b.h. in inches	Total number of insects per 15-tray sample	
			1965	1966
Enniskillen	scP	5	26	8
Oneida	scP	3	3	0
Stamford	jP	5	5	3
Stamford	scP	4	58	8
Willoughby	scP	5	5	3

European Spruce Sawfly, Diprion hercyniae (Htg.)

Medium infestations reported at the St. Williams Nursery in 1965 declined to light intensity in 1966. Populations of this introduced insect were low at all sampling points in the district (Table 9).

TABLE 9

Summary of European Spruce Sawfly Larval Counts in Lake Erie District in 1965 and 1966

Location (township)	Host	Av. d.b.h. in inches	Total number of insects per 15-tray sample	
			1965	1966
Adelaide	wS	5	3	2
Gainsborough	nS	12	4	0
North Cayuga	wS	5	5	6
South Walsingham	wS	11	103	13
Woodhouse	nS	14	19	9

Introduced Pine Sawfly, Diprion similis (Htg.)

A medium infestation that occurred on a jack pine windbreak in Stamford Township in 1965 declined to light intensity in 1966. This was due, in part, to the severe branch pruning the previous winter, leaving only very small upper crowns. Small numbers of larvae were observed on nearby Scots pine trees (Table 10).

TABLE 10

Summary of Introduced Pine Sawfly Larval Counts in Lake Erie District in 1965 and 1966

Location (township)	Host	Av. d.b.h. in inches	Total number of insects per 15-tray sample 1965	1966
Stamford	jP	4	250+	30
Stamford	scP	4	126	145

White-pine Shoot Borer, Eucosma gloriola Heinr.

Population levels of this insect in Scots and white pine plantations increased in the district in 1966 compared with 1965. The incidence of leader attack was particularly high in white pine plantations in MacGillivray and Dunn townships (Table 11).

TABLE 11

Summary of Shoot Damage by the White-pine Shoot Borer in Lake Erie District from 1964 to 1966

Location (township)	Host	Av. height of trees in feet	Per cent of trees infested 1964	1965	1966	Av. no. of attacks per infested tree 1964	1965	1966	Per cent of leaders attacked 1964	1965	1966
Aldborough	wP	7	52	15	10	1.2	1.1	0.5	16	2	2
Charlotte-ville	wP	8	95	7	64	4.0	1.3	0.9	54	7	8
McGillivray	wP	8	-	31	96	-	3.4	4.6	-	9	48
Middleton S	ScP	8	100	85	90	10.8	7.6	3.6	40	23	20
Thorold	wP	10	31	35	52	1.3	1.5	0.9	0	6	16
Dunn	wP	7	-	-	80	-	-	2.0	-	-	32

Elm Leaf Beetle, Galerucella luteola (Schrank)

Heavy infestations of this pest recurred in the city of St. Catherines and medium infestations persisted on English elm trees at Port Stanley. Medium infestations observed in 1965 on white elm shade trees at the Court House in St. Thomas declined to light intensity in 1966. Severe defoliation was noted on several roadside white elms near South Woodslee in Maidstone Township, and on one 35-foot white elm at Fort Malden in the Town of Amherstburg.

Fall Webworm, Hyphantria cunea (Drury)

An increase in numbers of fall webworms occurred throughout the district in 1966, particularly in Lincoln and Welland counties.

Heavy infestations recurred on Pelee Island where eastern choke cherry and hackberry were preferred hosts. A mass collection of late stage larvae was made for Dr. Kelleher of the Belleville laboratory. Parasites obtained from this collection will be sent to the Soviet Union.

Eastern Tent Caterpillar, Malacosoma americanum (F.)

High populations of this insect persisted along Highway 21 from Grand Bend to The Cut in Bosanquet Township. Numbers were also high at numerous points in the northern part of Norfolk County, on hawthorn shrubs in Brooke Township, and on apple trees near Bothwell in Zone Township (see map).

Medium to heavy infestations occurred on apple trees in Adelaide Township and low to medium numbers were observed on cherry shrubbery from Corunna to Petrolia in Moore Township, and on pin cherry near Cairo, Euphemia Township. Low populations were recorded at most sample points in the district, as shown in table 12.

TABLE 12

Summary of Eastern Tent Caterpillar Colony Counts in Lake Erie District in 1965 and 1966

Location (township)	Sample unit	No. of colonies per sample unit 1965	1966
Bosanquet	1 mile roadside	400+	200+
McGillivray	1 sq. chain plot	1	1
Moulton	1 mile roadside	1	2
S. Walsingham	1 mile roadside	1	1
W. Nissouri	1 sq. chain plot	4	6
Woodhouse	1 mile roadside	2	4
Zone	1 square chain plot	3	5

Spiny Elm Caterpillar, Nymphalis antiopa Linn.

The increase in populations recorded in 1965 continued in 1966. A 12-foot section of Chinese elm hedge in the Frechette section of the St. Williams Nursery was severely defoliated. Moderate defoliation occurred on four 20-foot willow trees near the Fort Erie race track, on one willow shrub on Walpole Island, and on one cottonwood tree in Rochester Township.

European Pine Shoot Moth, Rhyacionia buoliana (Schiff.)

An upward trend in population levels of this shoot moth occurred in the district in 1966. Medium to heavy infestations occurred in Scots pine plantings in Miller's Creek Park on the Niagara Parks Commission driveway, on 20 Scots pine trees on the MacDonald-Cartier Freeway, Westminster Township, on a red pine hedgerow near Strathroy in Caradoc Township and in a Scots pine plantation in Wainfleet Township.

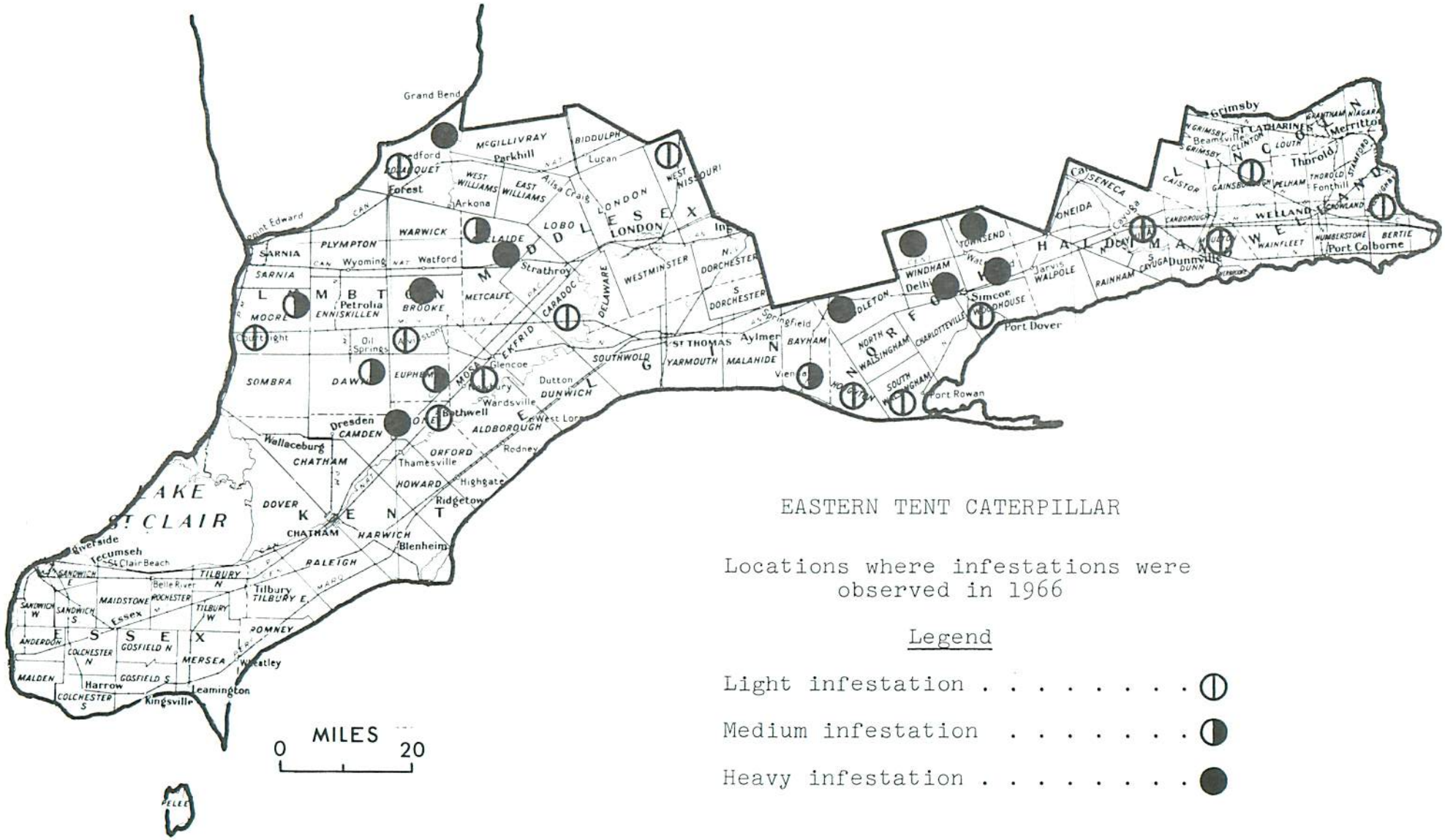
Low to medium numbers occurred on Scots pine in Bertie, Caradoc and Moore townships. A considerable decline was noted in the moderate populations which were recorded in Pelham Township in 1965 (Table 13).

TABLE 13

Summary of European Pine Shoot Moth Damage in Red Pine Plantations in Lake Erie District in 1965 and 1966

Location (township)	Av. d.b.h. in 1966	Per cent of bud clusters infested in the spring		Degree of infestation in 1966
		1965	1966	
Aldborough	2	0	0.6	L
Euphemia	2	0.5	0.8	L
Pelham	2	5.5	0.8	L
Romney	2	4.6	1.7	L
N. Cayuga	2	0.7	0	nil
Willoughby	3	1.1	0.9	L
Woodhouse	3	0.3	5.3	L

LAKE ERIE DISTRICT



EASTERN TENT CATERPILLAR

Locations where infestations were observed in 1966

Legend

Light infestation . . . . . ◐

Medium infestation . . . . . ◑

Heavy infestation . . . . . ●

TABLE 14

Summary of Miscellaneous Insects Collected
in Lake Erie District in 1965

Insect	Host(s)	Remarks
Acraspis erinacei But.	wO	Heavy on several trees at Burgoyne Woods, St. Catharines
Acronicta interrupta Gn.	pCh, wE, sMo	Light at six scattered points
Acronicta lepusculina Gn.	Co	Light at three locations
Alsophila pometaria Harr.	Ba, wE, wt	Infestations remain light throughout the district
Altica ulmi Wood	rE	Moderate at McKay Forest, Elgin County
Anoplonyx luteipes Cress.	eL	Moderate on lower branches of trees in county plantation, South Walsingham Township
Anchylopera burgessiana Zell	pCh, rU	Moderate in Aldborough Township, light in Charlotteville Township
Anisota rubicunda Fabr.	siM	Moderate on one tree in Dunn Township
Anisota senatoria A. & S.	bO, rO	Heavy on several trees at Pinery Park, Bosanquet Township, and one tree in Dawn Township. Moderate on lower crowns of mature trees at Glencoe; light elsewhere
Antheraea polyphemus Cram.	cE, Ba	Heavy on Chinese elm hedge at Port Rowan; small numbers at seven scattered locations in district
Arge sp.	rO, blO	Remain light to heavy on sporadic trees at Turkey Point Nursery and provincial park
Argyresthia laricella Kft.	eL	Caused light shoot damage at scattered locations in the district
Automeris io Fabr.	tA	One large colony, South Walsingham Township
Bucculatrix canadensisella Cham.	yB	Heavy infestations along MacDonald-Cartier Freeway at junction of highway 73, Middlesex County
Canarsia ulmiarrosorella Clem.	wE	Moderate on lower branches at Butler Burying Ground, Niagara-on-the-Lake
Citheronia regalis (F.)	bO	Rare insect found at Glencoe
Coleophora betulivora McD.	wB	Medium on one tree at park at St. Williams nursery
Coleophora ulmifoliella MacD.	wE	Very heavy on two trees on Queen Elizabeth Way; light at five other points

TABLE 14 (continued)

Insect	Host(s)	Remarks
Dendroctonus valens Lec.	wP	Moderate in one tree in Wright Tract, McGillivray Township
Dioryctria disclusa Heinr.	ScP, jP	Light and moderate cone damage at scattered locations
Dioryctria zimmermani Grt.	mP, scP	Medium on a mugho pine near Thamesville. Light infestations remain in the Newbury-Bothwell area, showing an eastward trend
Elaphidionoides parallelum Newn.	rO, wO	Light at Pinery provincial park, Lambton County, although trend is upward. Also light at Cayuga court house and Niagara-on-the-Lake
Epinotia aceriella Clem.	sM	Moderate on many trees at John E. Pearce Provincial Park, Elgin County
Epinotia sp.	hazelnut	Heavy infestations recurred in catkins, Vanessa conservation area.
Erannis tiliaria Harr.	wB, wE	Remain in very low numbers
Eriocampa juglandis (Fitch)	Bu	Severe defoliation of two trees at Point Pelee national park.
Eriophyes betulae Steb.	wB	Moderate on one tree at Kettle Point Indian reserve
Fenusa dohrnii (Tischb.)	e bl Al	Very heavy on hedgerows in western Charlotteville Township; heavy on two 25-foot trees at St. Williams nursery public park
Fenusa pusilla (Lep.)	wB	Heavy on one tree at Port Burwell; light at Kettle Point and Waterford conservation area
Fenusa ulmi Sund.	wE	Heavy on all lower branches of mature trees at St. Thomas court house
Glishrochilus quadrisignatus Say	-	Very common in central part of district in early July; feed on sap and decaying fruit
Ichthyura inclusa Hbn.	Co	Very heavy on shrub in Mersea Township; heavy on shrub in Rochester Township. Larvae are night feeders
Ichthyura sp. prob. strigosa	wPo	One large colony on shrub near fort at Niagara-on-the-Lake
Lithocolletis aceriella Clem.	rM	Heavy on lower crown of one tree near St. Williams; up to seven miners per leaf
Nematus hyalinus (Nort.)	W	Moderate on tree at Spooky Hollow

TABLE 14 (continued)

Insect	Host(s)	Remarks
Nematus salicisodoratus Dyar	tA	Moderate on one tree at Spooky Hollow nature trail
Nepticula sp. prob. sericopeza	nM	Caused considerable dropping of samaras of mature tree in Port Dover
Neuroterus quercus batatus (Fitch)	rO	Numerous galls on branch tips of 50-foot tree on Niagara escarpment at Grimsby. Considerable branch tip mortality and clusters of dead leaves
Orgyia leucostigma J.E. Smith	siM, mM	Heavy infestations on scattered trees in Essex County. Light elsewhere
Pantographa limata G. & R.	Ba	Medium to heavy on most understory at Point Pelee nature trail; light at Turkey Point private road
Papilio glaucus Linn.	tuliptree	Moderate defoliation on branches of ornamental at Lands and Forests district office, Aylmer West
Pareophora minuta MacG.	wAs	Moderate on tree at Byng conservation area, Dunn Township
Pissodes strobi (Peck)	wP	Scattered light damage in the district
Polygonia interrogationis Fabr.	wE	Moderate on two trees near Fort Erie; light at several other points
Pristiphora geniculata (Htg.)	M	Medium and heavy defoliation occurred in S. Walsingham, Southwold and Malahide townships. Light elsewhere
Pulvinaria innumerabilis Rath.	sM, siM	Heavy on ornamentals at Sparta and Port Dover; parasitism of nymphs heavy at the latter point
Recurvaria gibsonella Kft.	rJ	Medium to heavy on ornamentals at Port Dover
Semiothisa ocellinata Gn.	bl Lo	Moderate on hedgerow near Rhineland in Norfolk County; a beating mat sample
Spilochalcis melana Burks.	-	A first Canadian record of this parasite. Two chalcids reared from Pachyschelus sp. (Buprestidae) mines on trefoil.
Symmerista canicosta Francl.	rO	One colony at Turkey Point park
Tethida cordigera (Beauv.)	wAs	Moderate defoliation on one tree at Byng park, Dunn Township
Trichiocampus viminalis	lPo, Co	Medium to heavy defoliation on solitary or small groups of trees in Gosfield North, North Grimsby, and Walpole townships