Status of Insects in Tweed District

Livesey, F.

Information Report O-X-35
(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
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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
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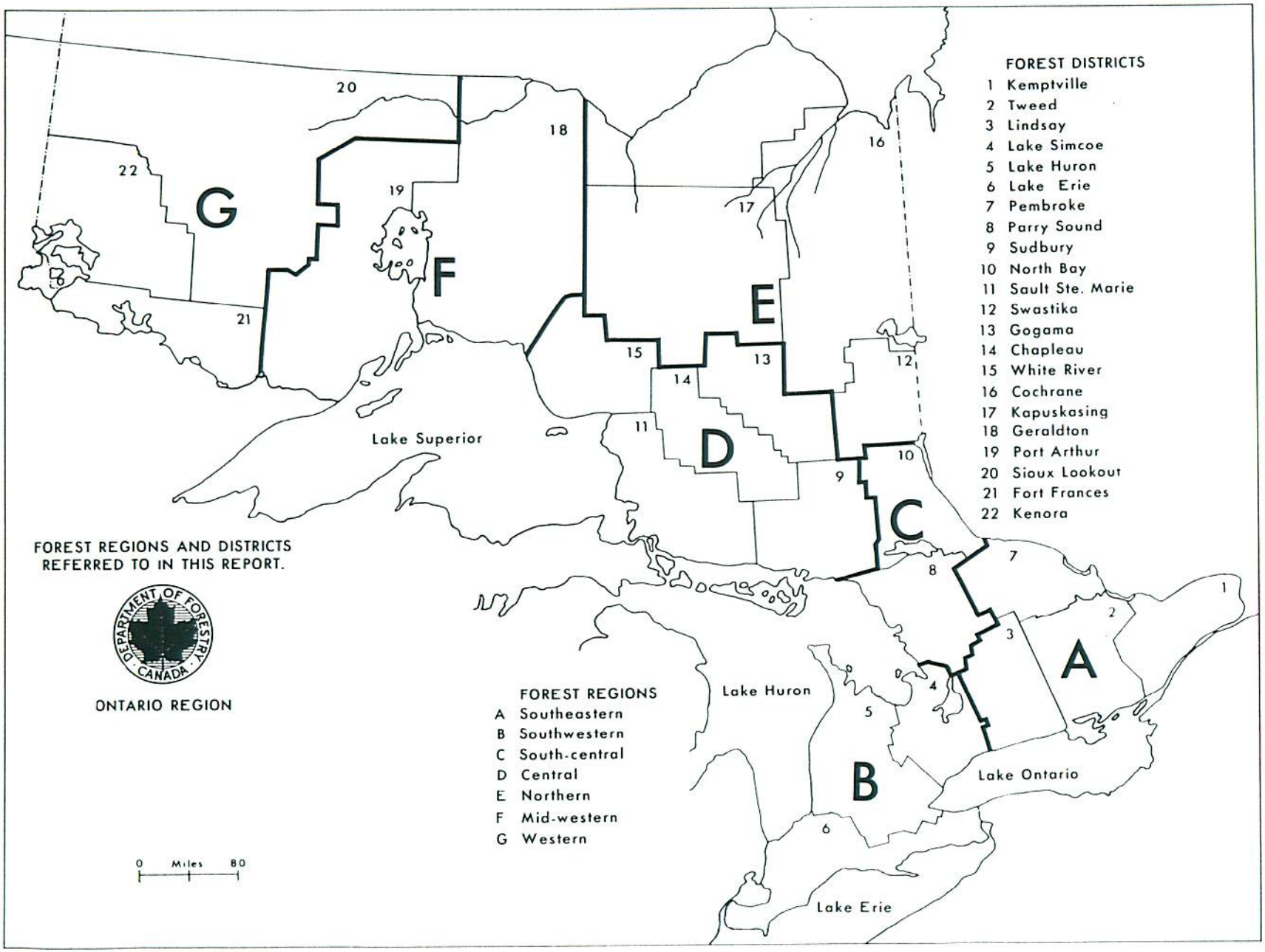
Ontario

* 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 TWEED DISTRICT

F. Livesey

Sugar Maple Borer, Glycobius speciosus (Say)

This beetle caused considerable mortality of mature sugar maple trees in farm woodlots in Camden and Sheffield townships in Lennox-Addington County.

The insect lays its eggs in crevices in the bark. After hatching, the larva feeds across the grain of the wood beneath the bark, cutting a deep channel into the wood (see photograph). These channels frequently girdle large branches and the stems of host trees, causing mortality.

Eastern Tent Caterpillar, Malacosoma americanum (F.)

A marked increase in population levels occurred on choke cherry throughout the district even though late spring frosts caused considerable mortality of young larvae at many locations. Colony counts at sample points ranged from a low of 4 to a high of 962 (Table 10).

TABLE 10

Summary of Eastern Tent Caterpillar Colony Counts in Tweed District from 1964 to 1966

Township	Number of tents observed per mile of roadside		
	1964	1965	1966
Bagot	74	14	160
Elzevir	47	16	126
Faraday	15	15	31
Grattan	-	114	962
Griffith	26	39	156
Hinchinbrooke (1)	63	73	66
Hinchinbrooke (2)	-	-	124
Lyndoch	49	10	117
Madoc	-	114	380
McNab	-	46	240
Oso	93	103	61
Radcliffe (1)	109	62	12
Radcliffe (2)	-	-	369
Raglan	96	41	94
Sheffield	112	538	274
Thurlow	82	40	91
Wicklow	6	7	28
Wollaston	12	3	4

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Egg band counts made in 1965 indicated that severe defoliation of host trees would recur in infestations in Radcliffe, Bangor and Kaladar townships. However, spring frosts decimated early instar larvae in Kaladar and Bangor townships, and only the infestation at Halfway Lake in Radcliffe Township reached the level of intensity that was forecast.

Light to moderate defoliation of trembling aspen occurred in woodlots at scattered locations in the southeastern part of Renfrew County, and small areas of light infestation were observed in Oso and Palmerston townships in Frontenac County.

Tables 11 and 12 show results of cocoon dissections, egg band counts, and infestation forecasts for 1967.

TABLE 11

Summary of Forest Tent Caterpillar Cocoon Dissections in Tweed District from 1964 to 1966

Township	Per cent of cocoons parasitized			Per cent adult emergence		
	1964	1965	1966	1964	1965	1966
Kaladar	-	31	39	-	67	59
McNab	-	39	63	-	60	38
Radcliffe	46	43	34	47	55	66

TABLE 12

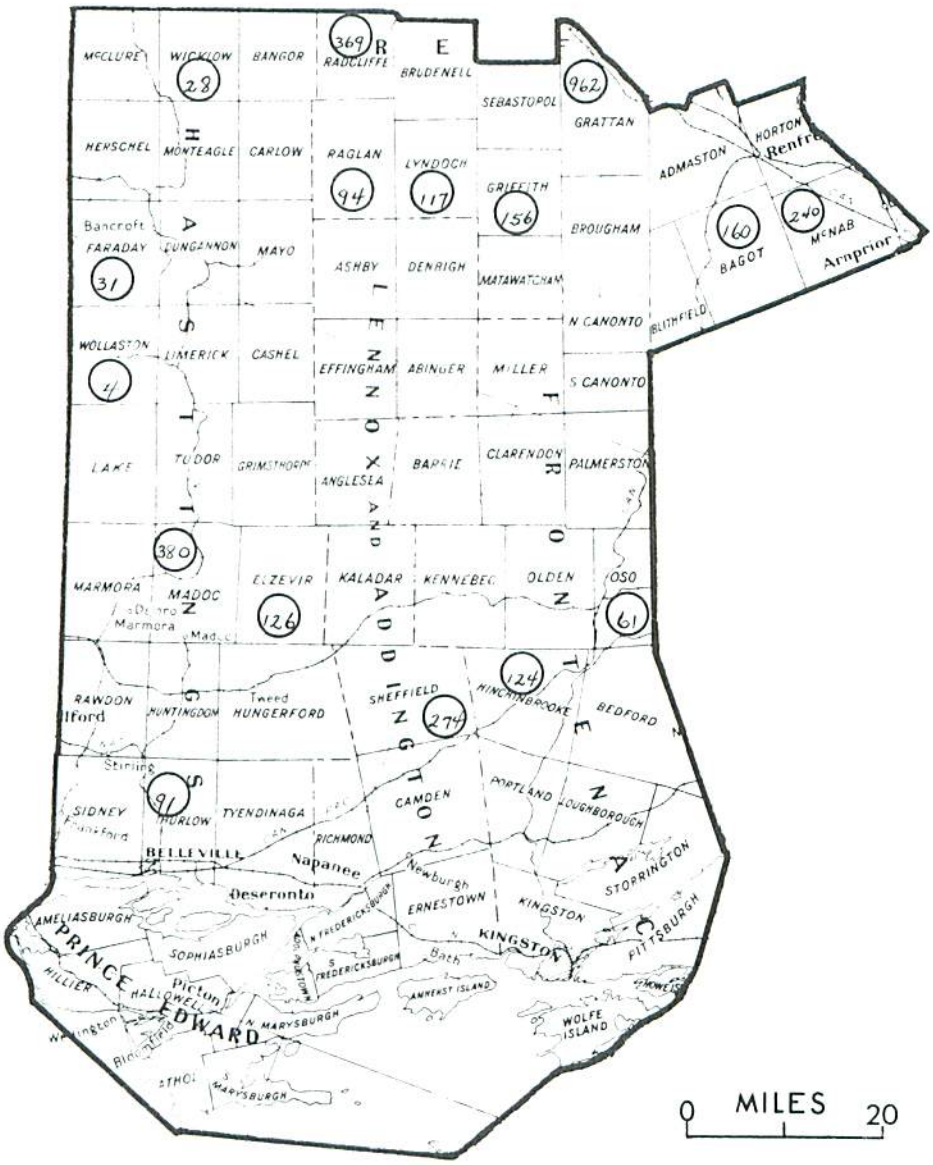
Summary of Forest Tent Caterpillar Egg Band Counts in Tweed District from 1964 to 1966 and Infestation Forecasts for 1967

Township	Av. d.b.h. of sample trees in inches	Av. no. of egg bands per tree			Forecast for 1967
		1964	1965	1966	
Bangor	5	-	36.9	2.3	Moderate
Kaladar	4	-	12.1	0.3	Light
McNab	2	-	1.3	0.3	Light
Radcliffe	6	25.3	17.1	7.0	Heavy

Cedar Sawfly, Monoctenus fulvus Nort.

A decline in numbers of this insect occurred throughout the district. As shown in Table 13, counts ranged from a low of 2 larvae per 15-tray sample in Rawdon Township to a high of 12 larvae in a similar sample from Sheffield Township.

TWEED DISTRICT



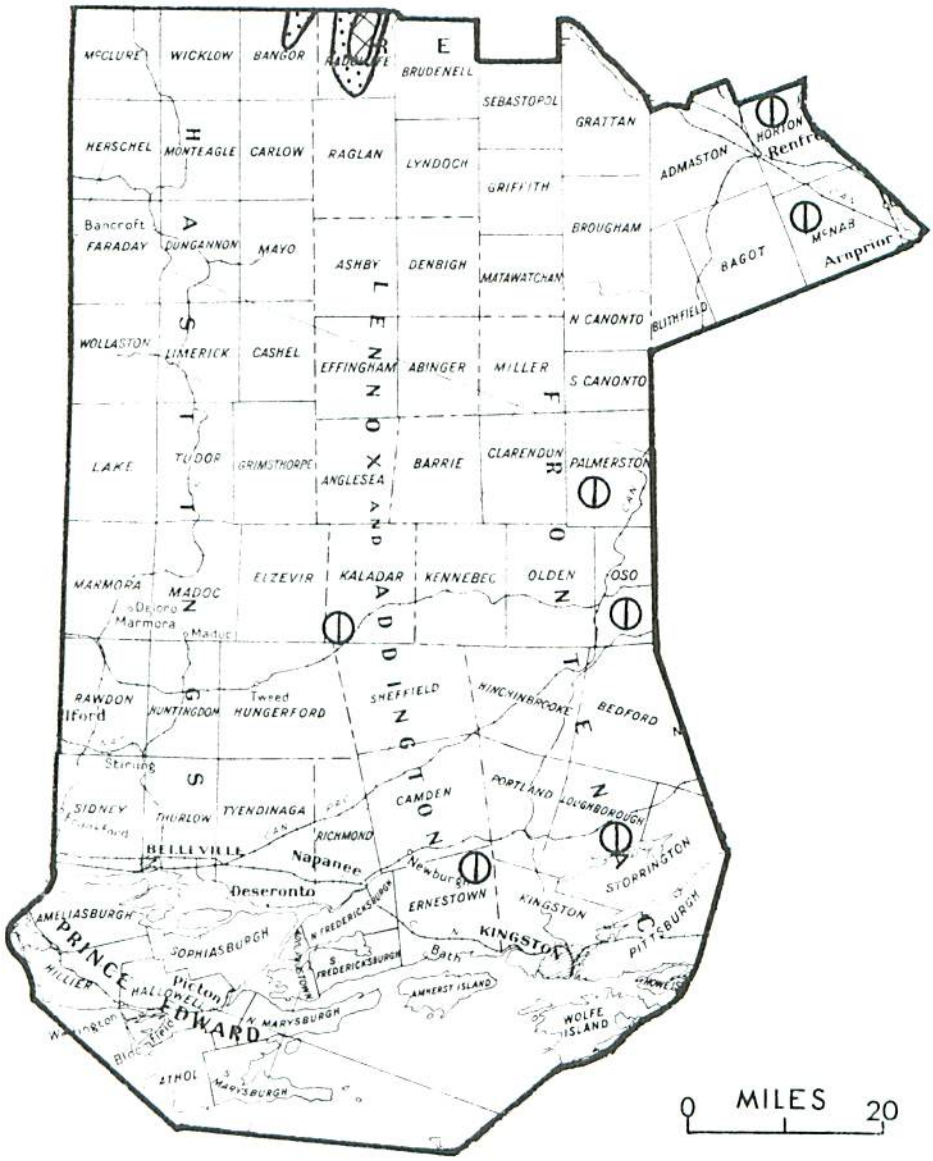
EASTERN TENT CATERPILLAR

Numbers of tents per measured mile of roadside

Legend

Numbers of tents . . . . . (10)

TWEED DISTRICT



FOREST TENT CATERPILLAR

Areas in which defoliation occurred in 1966

Legend

Light defoliation . . . . . or

Moderate to severe defoliation .

TABLE 13

Summary of Cedar Sawfly Larval Counts
in Tweed District from 1964 to 1966

Township	Av. d.b.h. of trees in inches	Total number of larvae per 15-tray sample		
		1964	1965	1966
Admaston	6	29	11	4
Bangor	5	0	23	3
Huntingdon	4	0	34	9
Kingston	2	-	5	6
Limerick	3	0	70	3
Matawachan	6	16	9	7
Oso	6	16	8	6
Rawdon	4	3	29	2
Sheffield	6	-	7	12
Wollaston	4	30	13	9

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Heavy infestations occurred in red pine plantations in Pittsburgh and Barrie townships in Frontenac County; in Elzevir, Wollaston, and Marmora townships in Hastings County; in McNab Township in Renfrew County, and in Kaladar Township in Lennox-Addington County. The heaviest infestation, on 15- to 20-foot trees in a privately-owned plantation in Pittsburgh Township, was controlled by spraying with D.D.T. Considerable branch mortality had resulted from complete defoliation in the plantation in 1965.

Numerous pockets of medium to heavy infestation occurred in plantations and on reproduction elsewhere in the district. The results of quantitative sampling are summarized in Table 14.

TABLE 14

Summary of Red-headed Pine Sawfly Colony Counts
in the Tweed District from 1964 to 1966

Township	No. and species examined	Average height of trees	No. of trees infested	Av. no. of colonies per infested tree		
				1964	1965	1966
Effingham	100 rP	7	8	-	1.3	1.5
Elzevir	100 rP	4	33	-	1.2	1.3
Grattan	100 rP	4	15	1.0	1.0	1.8
McNab	50 rP	8	50	1.3	6.0	4.8
Olden	20 rP	6	9	-	2.1	1.6
Thurlow	16 jP	30	3	1.0	1.0	1.0

Jack-pine Sawfly, Neodiprion pratti paradoxicus Ross

This insect increased in numbers on jack pine throughout the district in 1966. Pockets of severe defoliation were observed in Marmora Township in Hastings County; in McNab, Horton and Radcliffe townships in Renfrew County, and in Olden and Bedford townships in Frontenac County.

Light infestations and scattered colonies were observed commonly on jack pine in the remainder of the district. For the third consecutive year roadside trees in Marmora Township were most heavily infested (Table 15).

TABLE 15

Summary of Jack-pine Sawfly Colony Counts
in the Tweed District from 1964 to 1966

Township	Av. d.b.h. of trees in inches	No. of trees examined	Av. no. of colonies per tree		
			1964	1965	1966
Abinger	3	10	-	1.7	1.1
Bangor	3	10	-	9.5	12.4
Elzevir	7	10	5.2	8.5	12.7
Hungerford	7	10	3.2	14.1	25.0
Marmora	6	10	50+	50+	50+
Olden	4	10	7.0	8.1	7.1
Pittsburgh	2	10	-	-	8.3

European Pine Sawfly, Neodiprion sertifer (Geoff.)

Small numbers of this important insect were found in Sand Banks Provincial Park, posing a problem in Scots pine plantations. Moderate defoliation of Scots, jack, red, and Mugho pines recurred in the city of Belleville. The insect was not found elsewhere in the district.

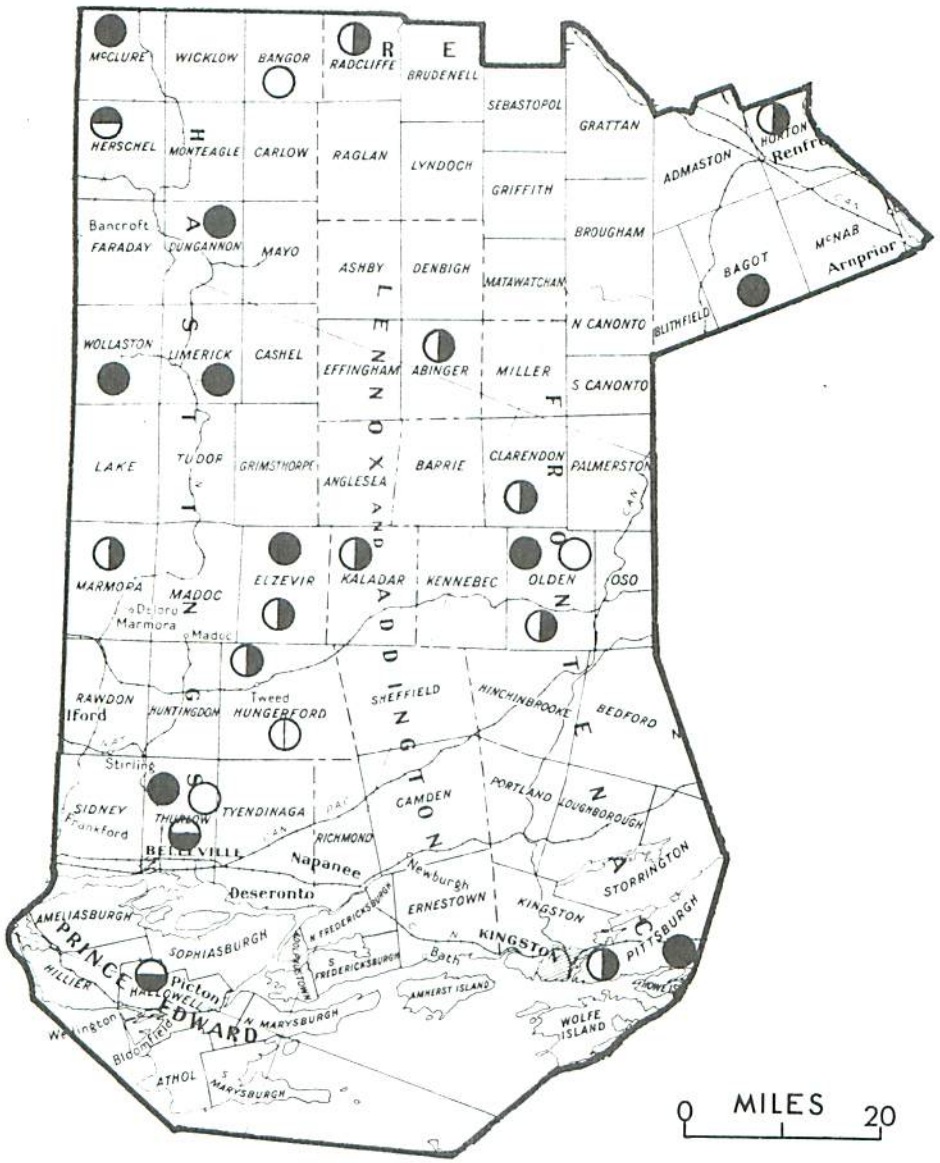
Yellow-headed Spruce Sawfly, Pikonema alaskensis Roh.

Population levels of this sawfly were comparable to 1965 in the district. Locally, severe infestations recurred on white spruce plantations at the O'Hara Mill in Madoc Township, on underplanted white spruce at Sand Banks Provincial Park in Prince Edward County and on a white spruce windbreak along Highway 41 in Lennox-Addington County. Low populations were observed in all other spruce stands sampled in the district.

White Pine Weevil, Pissodes strobi Peck

The white pine weevil was found commonly on white pine, jack pine and red pine throughout the district. The highest incidence of damage occurred in a mixed white pine-red pine plantation in Effingham Township in Lennox-Addington County. At this location 16 per cent of the white pine were infested (Table 16).

TWEED DISTRICT



Locations where five species of pine sawflies were collected and cocoons were exposed in 1966

Legend

Neodiprion compar. . . . . ◒

Neodiprion lecontei. . . . . ●

Neodiprion nanulus nanulus . . ◐

Neodiprion pratti paradoxicus. . ◑

Neodiprion sertifer. . . . . ◒

Cocoon exposure points . . . . . ○

TABLE 16

Summary of White Pine Weevil Counts
in Tweed District in 1965 and 1966

Township	Host tree and number sampled	Av. d.b.h. in inches	Per cent of leaders weevilled	
			1965	1966
Effingham	200 wP	2	25	16
Effingham	100 rP	2	9	3
Grattan	100 wP	1	4	5
Hungerford	100 wP	2	21	12
Kaladar	100 wP	1	9	7
Madoc	100 wP	1	6	6
McNab	200 wP	1	5	3
Pittsburgh	100 wP	1	-	3
Radcliffe	100 jP	2	6	5
Sidney	100 wP	1	-	3

Larch Sawfly, Pristiphora erichsonii (Htg.)

A small heavy infestation persisted in a 100-acre tamarack stand in Kaladar Township in 1966. Approximately 65 per cent defoliation occurred in 1966 compared with 85 per cent in 1965. Damage in the remainder of the district was negligible.

TABLE 17

Summary of Miscellaneous Insects Collected
in Tweed District

Insect	Host(s)	Remarks
Acleris variana Fern.	wS, bF	Small numbers near Springbrooke in Rawdon Township.
Acmeops proteus Kby.	wS	Collected in trap logs in Raglan Twp.
Adelges abietis Linn.	wS	Widely separated trees in Hastings County were heavily infested.
Agromyza ulmi Frost	sE	Light leaf miner infestation near Hawkins Bay, Hungerford Township.
Alsophila pometaria Harr.	wE, Ba	Small numbers in souther part of district.
Anacampsis innocuella Zell.	tA	Heavy leaf roller infestation on roadside reproduction in Effingham Township.
Anomoea laticlavia Frost	W	Leaf beetles found in Raglan Twp.

TABLE 16 (continued)

Insect	Host(s)	Remarks
Anomogyna elimata Gn.	bF	Few near Silver Lake, Oso Township.
Anoplonyx luteipes (Cress.)	tL	Occurred in small numbers in Kaladar and Griffith townships.
Archippus packardianus Fern.	wS	Small numbers near Springbrook, Rawdon Township.
Archips infumatanus Zell.	Wa	One colony in plantation in Pittsburgh Township.
Argyresthia aureoargentella Brower	eC	Trees lightly infested north of Trenton.
Argyresthia laricella Kft.	tL	Found throughout the district in small numbers.
Argyresthia thuiella Pack.	eC	Light infestations in the northern half of Hastings County.
Argyrotaenia pinatubana Kft.	wP	Low pine tube moth populations throughout the district.
Biston cognataria Gn.	Hon.	In beating tray samples in Hastings and Prince Edward counties.
Bucculatrix ainsliella Murt.	wO	Light leaf miner infestation near Marysville, Tyendinaga Township.
Caripeta angustiorata Wlk.	wP	The brown pine looper. Common in small numbers in September.
Caripeta divisata Wlk.	bf,eH,wS	The grey spruce looper. Small numbers throughout the district in September.
Cecidomyia verrucicola O.S.	Ba	Heavy wart gall infestations in Ernestown, Hillier, and Pittsburgh townships.
Cenopis acerivorana Mack.	sM	Low population levels at Glanmire Lake, Tudor Township.
Cenopis pettitana Rob.	Ba	Few found on small trees in Oso Twp.
Chlorochlamys chloroleucaria Gn.	eH	Cat-faced looper found east of Verona, Frontenac County.
Choristoneura fumiferana (Clem.)	wS	Small light infestation of spruce budworm in Rawdon Township, Hastings County.

TABLE 16 (continued)

Insect	Host(s)	Remarks
Choristoneura vosaceana Harr.	wB	Low leaf tier population at White Lake, Olden Township.
Coleophora betulivora McD.	wB	Birch casebearer. Found only at White Lake, Olden Township.
Compsolechia niveopulvella Chamb.	tA	Small heavy infestation on regeneration near Cloyne, Effingham Township.
Dasyneura balsamicola Lintn.	dF	Several trees lightly infested at Silver Lake in Oso Township.
Dasyneura communis Felt	sM	Leaf galls common on small trees in Denbigh Township.
Dichelonyx linearis Gyll.	He	Common on one tree only at White Lake, Olden Township.
Ecdytolopha insiticiana Zell.	Hon.	Common in the southern half of the district.
Ectropis crepuscularia (Schiff.)	He	Low numbers in Bangor Township, Hastings County.
Erannis tiliaria (Harr.)	wF, Ba	The basswood looper was found rarely and only in the southern half of the district.
Erynnis icelus Scud. and Burg.	tA	Low numbers of larvae in Denbigh and McNab townships.
Eufidonia notataria Wlk.	He, wP	Low numbers of loopers obtained in beating samples in Bangor and Hungerford townships.
Eupithecia filmata Pears.	wS	The early brown looper was found at three locations.
Eupithecia palpata Pack.	wP	Small numbers in three townships.
Eupithecia sobrinata Hbn.	Juniper	Common in Palmerston Township.
Evodinus monticola (Rand.)	wS	Recovered from trap logs in Renfrew County.
Fenusa pusilla (Lep.)	wB	Increase in numbers over 1965. Heavily infested trees found in three townships.

TABLE 16 (continued)

Insect	Host(s)	Remarks
Feralia jocosa Gn.	jP, wP	Low numbers at two locations.
Galerucella decora Say	W	The gray willow leaf beetle. Light infestation in Raglan Township.
Gonioctena americana Schaeff.	tA	Common throughout the district.
Gretchena delicatana Heinr.	I	Small numbers in Frontenac County.
Griselda radicana Wlshm.	wS	Small numbers at several locations.
Hydriomena divisaria Wlk.	tL, wS	The transverse-banded looper. Small numbers in Oso and McClure townships.
Hypagyrtis piniata Pack.	wS,tL,He	Pine measuring worm. Common throughout the district.
Hyphantria cunea (Drury)	E, W	Fall webworm common on Bay of Quinte and Lake Ontario shorelines.
Lapara bombycoides Wlk.	wP	Small numbers at two locations.
Leucanthiza dircella Braun	Leatherwood	Heavy infestations in Hastings County.
Lithocolletis robiniella Clem.	Hon.	Widespread, low numbers.
Nematus salicisodoratus Dyar	W	Widespread in small numbers.
Neodiprion abietis complex	bF	Balsam fir sawfly. Rare in the district.
Neodiprion compar (Leach)	rP	Found only in Herschel Township.
Neodiprion nanulus nanulus Schedl	rP	Small numbers in the town of Tweed.
Nepytia conosaria Wlk.	He	Small numbers of the false hemlock looper at four locations.
Pareophora minuta MacG.	bAs	Light defoliation in Dungannon and Ernestown townships.
Phytagromyza populicola (Hal.)	lPo	Heavily infested trees common in southern Hastings County.

TABLE 16 (concluded)

Insect	Host(s)	Remarks
Pikonema dimmockii (Cress.)	wS	Widespread, low numbers.
Plagiodera versicolora Laich	W	Heavy infestations on ornamental trees in south Frontenac County.
Podapion gallicola Riley	rP	Pine gall weevil common at one location in Kaladar Township.
Protoboarmia porcelaria indicataria Wlk.	wS,tL,He	Small numbers throughout the district.
Pseudexentera oregonana Wlshm.	tA	Light leaf roller infestations in Oso, Palmerston and Olden townships.
Rhyacionia buoliana (Schiff.)	scP	Light damage between Belleville and Trenton.
Schizurra concinna J. E. Smith	Deciduous	Small numbers on a wide variety of hosts.
Sciaphila duplex Wlshm.	tA	Common near Cloyne.
Semiothisa bicolorata Fabr.	wP, rP	Low population near Denbigh.
Semiothisa bisignata Wlk.	wP	Common throughout the district.
Semiothisa dispuncta (group)	wS, bF	Common throughout the district.
Semiothisa ocellinata Gn.	Lo, Hon.	Common in southern part of district.
Semiothisa sexmaculata Pack.	tL	Small numbers on all larch examined.
Semiothisa submarmorata Wlk.	tL	Small numbers throughout the district.
Thera juniperata L.	Juniper	Found only at Silver Lake, Oso Twp.
Zeiraphera ratzeburgiana Sax.	wS	Small light infestation in Rawdon Township, Hastings County.