

FOREST INSECT AND DISEASE SURVEYS
IN THE SOUTHWESTERN REGION
OF ONTARIO, 1974

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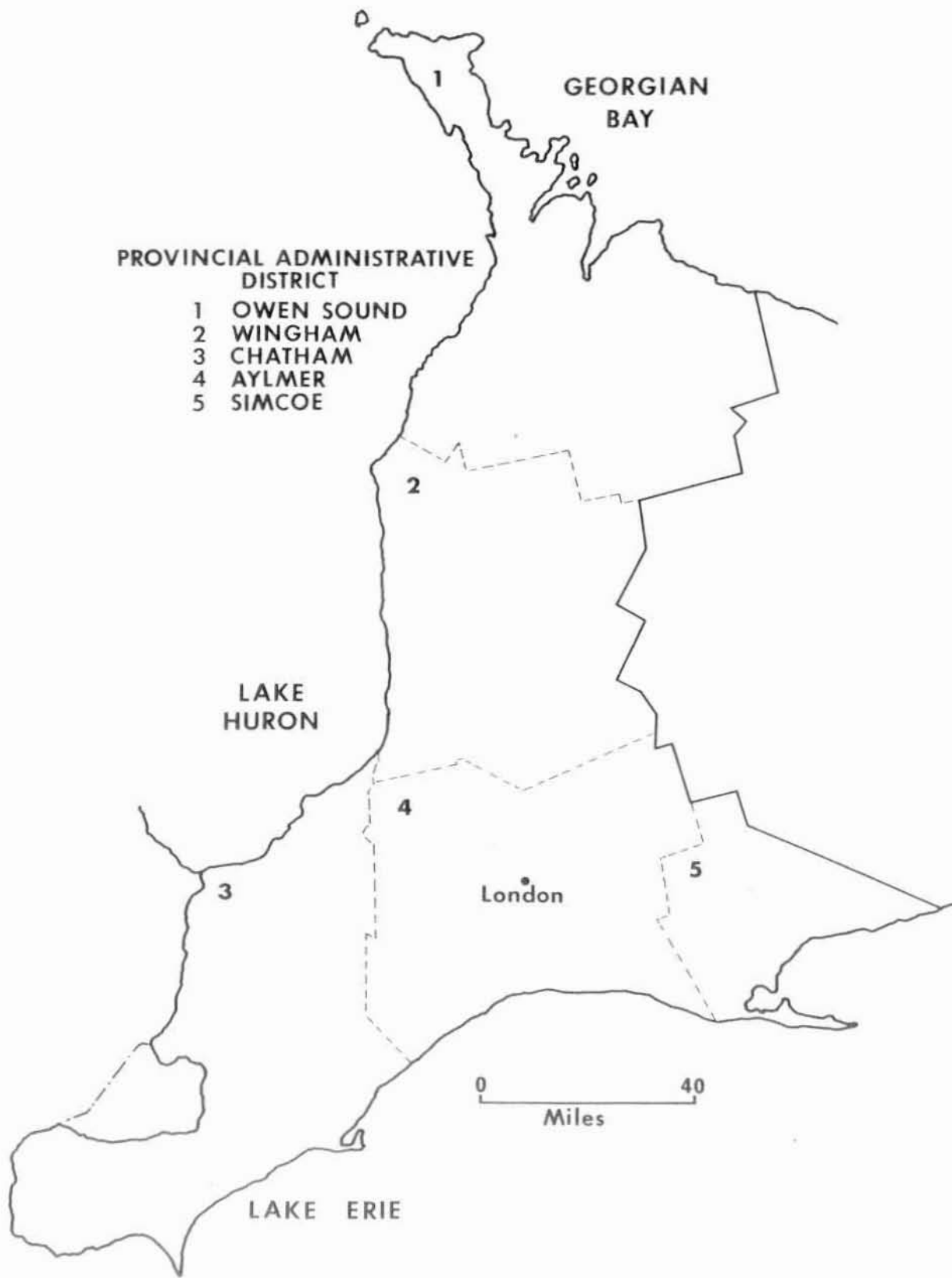
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SOUTHWESTERN REGION



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Frontispiece. Sugar maple stand severely defoliated by the forest tent caterpillar.

SURVEY HIGHLIGHTS

Outbreaks of forest tent caterpillar infestations at a number of locations resulted in the total defoliation of approximately 575 acres (232 ha) of sugar maple in the Owen Sound and Wingham districts. Heavy damage to foliage of various tree species was caused by cedar leafminers, oak skeletonizer, larch sawfly and eastern tent caterpillar, and a notable upward trend was evident in the intensity of injury to pine by European pine shoot moth and eastern pine shoot borer. The status of European pine sawfly and white pine weevil remained unchanged. Owing to an influx of spruce budworm moths in mid-July much damage to the new shoots of spruce trees is likely to occur in the southern part of the Region in 1975.

Heavy infections of *Lophodermium* needle cast continued on red pine in the St. Williams Forest Nursery. Extensive mortality of white elm caused by Dutch elm disease occurred through the northern part of the Region and a new infection of *Valsa* canker was discovered in the Owen Sound District.

The organism *Entomophthora megasperma* (Cohn) was responsible for heavy mortality of late-instar larvae of forest tent caterpillar and a polyhedral virus disease killed many eastern tent caterpillars. Surveys were conducted to determine the distribution of the introduced parasite *Lophyrophlectus luteator* (Thunb.) which appears to be spreading eastward. The parasite which attacks the larval stage of the European pine sawfly was introduced in 1962 in an effort to control this pest.

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INSECTS

Cedar Leafminers, *Argyresthia aureoargentella* Brower and
A. thuiella Pack.

Cedar leafminers continued to cause much browning of eastern white cedar (*Thuja occidentalis* L.) foliage and in many areas attracted a great deal of public concern. Severe damage was common in the London area of the Aylmer District and in parts of the Simcoe, Chatham, Wingham and Owen Sound districts. Some branch and top mortality caused by persistently heavy infestation occurred south of Warton in the Owen Sound District and in the Harriston area of the Wingham District. Elsewhere on the Bruce Peninsula severe foliar damage was recorded near Lions Head and at Barrow Bay in Eastnor Township. In a sample collected from Sullivan Township, 57% of *A. thuiella* larvae were parasitized.

Varying degrees of winter drying, a condition thought to be caused by abnormally high temperatures in early spring, also contributed to the browning of cedar foliage in some parts of the infestation.

Oak Skeletonizer, *Bucculatrix ainsliella* Murt.

First-generation larvae of this insect caused severe foliar damage of red oak (*Quercus rubra* L.) in a 50-acre (20.2 ha) stand west of Windham in the Simcoe District. Light damage was noted commonly on red oak trees at several other locations in the western part of the above mentioned district. Damage caused by second-generation larval feeding, from late August to mid-September, could not be assessed owing to an early termination of the field season.

Large Aspen Tortrix, *Choristoneura conflictana* Wlk.

Foliar damage caused by this pest of poplar (*Populus* spp.) trees was less severe on the Bruce Peninsula, Owen Sound District, than in 1973. Heavy infestation declined generally to moderate intensity in localized pockets of trembling aspen (*Populus tremuloides* Michx.) in the Johnston Harbour Road area in St. Edmunds Township. Trace-to-light defoliation was evident at a few locations elsewhere on the Bruce Peninsula. The overall low aspen content of forests in this area is really not conducive to continuing heavy outbreaks.

Spruce Budworm, *Choristoneura fumiferana* (Clem.)

The results of damage surveys, population sampling, and egg-mass counts have been included with those of other survey regions in a special information report by G. M. Howse et al. (O-X-228). This report provides a complete description and analysis of developments in the spruce budworm situation in Ontario in 1974 and gives infestation forecasts for the province for 1975.

Eastern Pine Shoot Borer, *Eucosma gloriola* Heinr.

Populations of this shoot borer generally declined in areas that have been sampled for the past three or more years (Table 1). However, light incipient populations caused tip mortality, particularly to lateral shoots, in young white pine (*Pinus strobus* L.) plantations in the Bells Lake area and north of Grey Main Tract in Glenelg Township and at several other locations in the central part of the Owen Sound District.

Table 1. Summary of shoot damage by the eastern pine shoot borer in the Southwestern Region from 1972 to 1974

Location (Twp)	Tree species	Avg ht of trees (ft) ^a	Total no. of shoots infested			Leaders attacked (%)		
			1972	1973	1974	1972	1973	1974
Owen Sound District Brant	wP	9	21	19	15	1	0	0
Wingham District Downie	wP	10	11	14	22	0	1	0
Aylmer District McGillivray	wP	10	18	25	8	2	0	0
Simcoe District Charlotteville	wP	12	15	17	11	0	0	0

^a 1 ft = 0.30 m

Fall Webworm, *Hyphantria cunea* Dru.

A general decline in the frequency of tents brought about a noticeable drop in the number of public inquiries in 1974. Only small numbers of unsightly webs were observed in the area bordering Lake Erie in Simcoe, Aylmer and Chatham districts where heavy infestations were reported in 1973. Light damage occurred in the Point Pelee area on scattered hackberry (*Celtis occidentalis* L.), black walnut (*Juglans nigra* L.) and basswood (*Tilia americana* L.) trees. Damage assessments were not made on Pelee Island in 1974. Widely scattered colonies were found on white birch (*Betula papyrifera* Marsh.), hawthorn (*Crataegus* sp.), black ash (*Fraxinus nigra* Marsh.) and wild apple (*Malus* sp.) elsewhere in the Region.

Eastern Tent Caterpillar, *Malacosoma americanum* F.

Colonies of this caterpillar construct silken tents which are used mainly as a resting place when larvae are not feeding and as a moulting site when the larvae change from one instar to the next. Tents are constructed in branch crotches and are either enlarged or duplicated as the larvae grow. Heavily infested host trees may be stripped of their foliage and appear unsightly because of the defoliation and ugly tents.

For the third consecutive year, the highest populations were noted in the northern part of the Region. Severe defoliation of black cherry (*Prunus serotina* Ehrh.) occurred in Sullivan Township and in the northern part of Bentinck Township in the Owen Sound District. Numerous colonies were observed on cherry (*Prunus* sp.), hawthorn and apple in Holland and Derby townships in the area east of Owen Sound, and in the Hepworth area in Keppel Township. High populations in 1973 in the northern part of the Wingham District declined to low levels and only occasional colonies were noted in the southern part of the Region.

A polyhedral virus infection again caused a high level of mortality of late-instar larvae at several points.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Following several years of endemic populations, outbreaks of the forest tent caterpillar reappeared in the Wingham and Owen Sound districts (see Frontispiece). In the Wingham District moderate-to-severe defoliation of sugar maple (*Acer saccharum* Marsh.) was recorded at six locations in Carrick Township and in three locations in Culross Township (see Appendix, Fig. A1). The infested areas ranged from 10 to 50 acres (4-20 ha) in size. In the Owen Sound District, the largest infestation occurred south of Neustadt in Normanby Township where approximately 200 acres (80 ha) of sugar maple were severely defoliated. Three infestations were noted in Sullivan Township and one in Holland Township where 25 acres (10 ha) of a large sugar maple stand were completely defoliated. The combined area of moderate and severe defoliation was approximately 575 acres (232 ha).

A moderate-to-high incidence of late-instar caterpillar mortality caused by the pathogenic organism *Entomophthora megasperma* (Cohn) was observed in virtually all infestations examined (Fig. 1).



Figure 1. Forest tent caterpillar mortality caused by *Entomophthora megasperma* infection

European Pine Sawfly, *Neodiprion sertifer* (Geoff.)

With the exception of one pocket of medium infestation in a Scots pine (*Pinus sylvestris* L.) plantation in Normanby Township, Owen Sound District, only light damage occurred (Table 2). At Inverhuron in Bruce Township, where severe damage was recorded for several years, the infestation declined to light intensity. A new light infestation was observed in a red pine (*Pinus resinosa* Ait.) plantation in Malahide Township in the Aylmer District.

In 1972 a special survey was initiated to determine the distribution of *Lophyrophlectus luteator* (Thunb.), a European parasite released by the Canadian Forestry Service in the Chatsworth and St. Williams areas in 1962. Collections of late-instar larvae from both locations were reared to the cocoon stage and forwarded to Sault Ste. Marie for further rearing and recovery of parasites. Present data show the parasites to be well established over most of the Owen Sound District but near St. Williams in the Simcoe District it is confined to a rather limited area.

Table 2. Summary of European pine sawfly colony counts and degree of infestation in three districts, 1972 to 1974 (Counts were based on the examination of 100 trees at each location.)

Location (Twp)	Tree species	Avg ht of trees (ft) ^a	Avg no. of colonies per infested tree			Trees infested (%)			Degree of infestation
			1972	1973	1974	1972	1973	1974	
Owen Sound District									
Sullivan	ScP	10	6.0	1.1	0.4	92	90	23	light
Amabel	ScP	9	2.0	0.6	0.7	22	24	19	light
Bruce	ScP	8	-	-	2.2	-	-	67	light
Simcoe District									
S. Walsingham	ScP	8	8.0	-	0.3	100	-	17	light
Aylmer District									
Malahide	rP	8	-	-	2.7	-	-	83	light

^a 1 ft = 0.30 m

White Pine Weevil, *Pissodes strobi* (Peck)

Damage to the leading shoots of susceptible pine species was found to be of little consequence this year. In Sullivan Township in the Owen Sound District where an infestation persisted for several years in a mixed red pine-white pine plantation, infested white pine trees decreased from 11% in 1973 to 6% in 1974 (Table 3). As is also shown in the table, counts were lower at all other locations examined.

Table 3. Summary of leader damage by white pine weevil in three districts from 1972 to 1974 (Counts were based on the examination of 100 trees at each location.)

Location (Twp)	Host	Avg DBH (in.) ^a	Trees infested		
			1972	1973	1974
Owen Sound District					
Sullivan	wP	2	1	2	1
Sullivan	wP	2	31	11	6
Wingham District					
Turnberry	wP	1	5	3	0
Kinloss	wP	2	-	2	1
Simcoe District					
Charlotteville	wP	3	1	1	0

^a 1 in. = 2.54 cm

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Moderate defoliation of European larch (*Larix decidua* Mill.) recurred on large trees at the St. Williams Nursery and in plantings in the Five Corners area in Charlotteville Township, Simcoe District. Light-to-moderate defoliation was observed in a block of European larch at Inglis Falls in Derby Township, Owen Sound District, and in the Minto Tract in Minto Township of the Wingham District. Damage remained low on tamarack (*Larix laricina* [Du Roi] K. Koch) on the Bruce Peninsula and at all other locations where this host was observed.

European Pine Shoot Moth, *Rhyacionia buoliana* Schiff.

Following several years of extremely low populations, an upward trend in the amount of damage caused by this pest began in 1972 and continued through 1974. This was due in part to the resumption of planting of red pine, the preferred host. Trees in nurseries and young plantations are especially susceptible to injury. The insect feeds first in needles and later in new shoots, and red or Scots pine trees heavily infested have a stunted, deformed appearance (see Fig. 2).

A heavy infestation continued in a 6-acre (2.4-ha) plantation of 4-ft (1.2-m) red pine trees in Amabel Township in the Owen Sound District where 82% of the bud clusters were infested compared with 80% in 1973 (Table 4, Fig. 2). Light damage was evident in several new areas in the Wingham and Owen Sound districts. The number of infested shoots declined slightly in the plot in Malahide Township in Aylmer District.

Table 4. Summary of shoot damage by European pine shoot moth in two districts from 1972 to 1974 (Counts were based on the examination of 100 bud clusters at each location.)

Location (Twp)	Host	Avg ht of trees (ft) ^a	Bud clusters infested		
			1972	1973 (%)	1974
Aylmer District					
Malahide	rP	7	36	11	2
Biddulph	ScP	5	-	-	27
Owen Sound District					
Amabel	rP	4	-	80	82

^a 1 ft = 0.30 m



Figure 2. Red pine bud cluster infested by European pine shoot moth

Table 5. Other forest insects

Insect	Host (s)	Remarks
<i>Acleris variana</i> Fern.	wS co1S	populations very low throughout the Region
<i>Adelges abietis</i> Linn.	wS	Galls were numerous on scattered trees in Bentinck Twp, Owen Sound District
<i>Alsophila pometaria</i> (Harr.)	Ba wAs rO	light defoliation in Elderslie, Harwich and Bosanquet twp

(continued)

Table 5. Other forest insects (continued)

Insect	Host(s)	Remarks
<i>Anisota virginiensis</i> Dru.	rO	small numbers of damaged leaves in the Pinery Prov. Park, Chatham District
<i>Anoplonyx luteipes</i> Cress.	tL	small numbers in Glenelg Twp
<i>Aphrophora parallela</i> (Say)	ScP wP	light damage to small twigs at numerous locations throughout the Region
<i>Archippus packardianus</i> Fern.	colS	low populations in Saugeen Twp
<i>Archips cerasivoranus</i> (Fitch)	ecCh	scattered tents in Sullivan, Bosanquet and N. Norwich twp
<i>Arge pectoralis</i> (Leach)	wB	increased birch sawfly populations on Bruce Peninsula, Owen Sound District; damaged trees common at several sample points
<i>Caulocampus acericaulis</i> MacG.	sM	This petiole borer caused light leaf drop on several trees in Sullivan Twp.
<i>Cenopsis pettitana</i> Rob.	Ba	small numbers of damaged leaves in Bosanquet and Blenheim twp
<i>Choristoneura pinus pinus</i> Free.	jP	defoliation negligible in the Region
<i>Datana integerrima</i> G. & R.	Wa	light-to-moderate defoliation on scattered trees in the southern part of the Region
<i>Dioryctria disclusa</i> Heinr.	rP ScP	small numbers of damaged cones in Charlotteville and Dorchester twp

(continued)

Table 5. Other forest insects (continued)

Insect	Host(s)	Remarks
<i>Dioryctria reniculelloides</i> Mut. & Mun.	wS	small numbers in association with spruce budworm in Charlotteville Twp
<i>Diprion frutetorum</i> (F.)	jP	populations very low
<i>Diprion hercyniae</i> (Htg.)	wS	Populations of European spruce sawfly remained low
<i>Diprion similis</i> (Htg.)	wP	status of this insect unchanged
<i>Epinotia aceriella</i> Clem.	sM	A heavy infestation continued in the John E. Pearce Prov. Park in Aylmer District.
<i>Erannis tiliaria</i> Harr.	Ba rO Haw wAs	light populations in Harwich, Bosanquet and Elderslie twp
<i>Exoteleia pinifoliella</i> (Cham.)	jP	high incidence of damaged needles on scattered trees in Euphrasia Twp, Owen Sound District
<i>Fenusa dohrnii</i> (Tischb.)	Al	severe leaf mining at one location in Bruce Twp
<i>Fenusa pusilla</i> (Lep.)	wB	severe leaf mining caused browning of ornamental birch crowns at numerous locations in the southern part of the Region
<i>Monoctenus</i> sp.	eC	Cedar sawfly populations remained very low. The highest number was recorded in Glenelg Twp where 47 larvae were collected in a 20-tray beating sample
<i>Neodiprion lecontei</i> (Fitch)	jP	several colonies found on one small tree in Amabel Twp

(continued)

Table 5. Other forest insects (continued)

Insect	Host(s)	Remarks
<i>Neodiprion nanulus nanulus</i> Schedl	rP	light defoliation on small understory trees at one location in the Pinery Prov. Park, Chatham District
<i>Neodiprion pratti banksianae</i> Roh.	jP	Defoliation declined from medium to light in the McCullough Lake plantation in Sullivan Twp
<i>Neodiprion virginianus</i> complex	jP	light defoliation of open-grown trees at Lake Emmet Road in St. Edmunds Twp
<i>Nephoteryx celtidella</i> Hlst.	Ha	light foliar damage on large trees on Point Pelee, Chatham District
<i>Nycteola cinereana</i> N. & D.	bPo	light defoliation of small trees in Lindsay Twp
<i>Phloeosinus canadensis</i> Sw.	eC	bark beetles common in cut trees
<i>Phyllobius oblongus</i> Linn.	Haw	light infestation in Sullivan and Mornington twp
<i>Pikonema alaskensis</i> (Row.)	wS	light defoliation on small trees at one location in Glenelg Twp; small numbers more common than in recent years at other sample points in the Region
<i>Pikonema dimmockii</i> (Cress.)	wS	small numbers in beating samples
<i>Plagiodera versicolora</i> Laich	W	light defoliation of large willows common in the London area; populations declined to very low in other areas where light damage occurred in 1973

(continued)

Table 5. Other forest insects (concluded)

Insect	Host(s)	Remarks
<i>Pristiphora geniculata</i> (Htg.)	Mo	light defoliation on scattered trees in the Region
<i>Profenusa thomsoni</i> (Konow)	wB	light population of leaf-miners in Collingwood Twp
<i>Pyrrhia exprimens</i> Wlk.	bPo	small trees lightly damaged in Amabel and Hay twp
<i>Rhabdophaga swaini</i> Felt.	wS	small numbers of damaged buds in Glenelg Twp
<i>Semiothisa ocellinata</i> Gn.	Hon	small numbers in Goderich Twp
<i>Zeiraphera canadensis</i> Mut. & Free	wS	small numbers of damaged buds in Amabel Twp
<i>Zeiraphera destitutana</i> (Walker)	wS	damaged shoots in Amabel Twp

TREE DISEASES

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau

As a result of high infection and tree mortality in the past, little white elm (*Ulmus americana* L.) remains in the southern part of the Region. In the northern part of the Region extensive mortality of elm in all age classes occurred in the Owen Sound District and spread to the Bruce Peninsula. In 1973 four sampling points were established to determine the annual mortality rate, largely for historical purposes. Reexamination of the trees at these points one year later revealed that the mortality rate ranged from 11% to 33%.

Table 6. Rate of mortality caused by Dutch elm disease during a one-year period (1973-1974) in the Southwestern Region

Plot location (Twp)	No. of living trees 1973	Rate of mortality 1973-1974 (%)
Owen Sound District		
Lindsay	14	25
Osprey	40	11
Sydenham	15	33
Wingham District		
N. Easthope	18	11

A Needle Rust of Pine, *Coleosporium asterum* (Diet.) Syd.

A moderate infection of this needle rust occurred in an 8-acre (3.2-ha) plantation of 5-year-old red pine in Amabel Township, Owen Sound District. Some 48% of the trees were diseased and the defoliation level was 23%. The alternate host, goldenrod (*Solidago* sp.), was abundant in the plantation. At several other locations in the Region, light infection levels occurred and at all locations the rust was confined to the lower branches of small red pine trees.

Eutypella Canker of Maple, *Eutypella parasitica* Davidson & Lorenz

This disease which causes stem cankers on sugar maple was found in most of the maple stands examined. Trees in the smaller diameter classes, especially those suppressed, are often killed. Cankers generally occur 2-8 ft (0.6-2.4 m) above the ground and on larger trees

they persist for many years. Consequently, the stem is weakened and it often breaks off at the canker. Stands were examined at 32 locations in the Region in 1973-1974 to assess the damage caused by this disease. The incidence of damaged trees in 32 stands examined ranged from 0 to 7.5%. Nil-to-trace infection occurred in 15 stands, an average of 2.5% of trees were damaged at 16 locations and 7.5% of the trees were diseased in a young sugar maple stand in Glenelg Township in the Owen Sound District.

Anthracnose of Oak, *Gloeosporium* sp.

In June, 1974 curling of white oak (*Quercus alba* L.) and red oak leaves was observed throughout the northern section of the city of Sarnia. This condition was more common on trees that had shown other signs of deterioration in past years and air pollution may have been involved. The Parks Department was concerned about oak wilt disease but no evidence of oak wilt could be found on samples submitted for identification.

In 1969 and again in 1971, severe wilting and curling of leaves occurred in Canatara Park at Sarnia and to a lesser degree in Rondeau Provincial Park. Again, however, samples showed no evidence of the causal organism and the foliage of oaks appeared normal in the following year.

Pine Needle Cast, *Lophodermium nitens* Darker

This needle cast again caused severe damage to red pine seedbeds in the St. Williams Tree Nursery in Simcoe District in 1974. Virtually all of the 2-0 stock in the southern half of Compartment 9-10 was killed and about one half succumbed in the rest of the compartment. No damage was observed in adjacent compartments.

Severe damage to 3-0 red pine stock and the death of several hundred thousand seedlings had been attributed to *Lophodermium pinastri* (Shrad. ex Hook.) Chev. in Compartment 19-20 in 1973. Mycological studies have indicated that the pathogen was *L. nitens*.

Tip Blight of Spruce, *Sirococcus strobilinus* Preuss. and Needle Cast of Spruce, *Rhizosphaera kalkhoffi* Bub.

The damage caused by these two pathogens decreased considerably in a blue spruce (*Picea pungens* Engelm.) plantation at Bells Lake in the Owen Sound District where severe shoot mortality has persisted for several years. The combined percentage of infected trees declined from

85% in 1973 to 60% in 1974 and the percentage of shoots damaged by *S. strobilinus* was 19% compared with 50% in 1973. Several of the heavily infected trees appeared stunted and were nearly dead. *Sirococcus strobilinus* kills only the current season's growth, but the damage is usually cumulative and eventually the entire tree may die.

Rhizosphaera kalkhoffi also occurred on numerous blue spruce trees in the plantation, but the extent of damage could not be readily determined. This needle cast attacks and kills needles of the old growth.

Valsa Canker, *Valsa kunzei* Fr.

Despite previous surveys in white spruce (*Picea glauca* [Moench] Voss) plantations to determine the extent and distribution of this canker-causing fungus, it was found for the first time in the Owen Sound District in 1974. The organism was collected from a stem canker of a dead 30-ft (9.14-m) tree in a compartment of white spruce in the Grey Main Tract where pruning had been carried out approximately 10 years ago (Fig. 3). A copious resin flow is almost always associated with these cankers and serves as an excellent symptom when examining suspect areas. Cankers usually appear first on the lower branches or stems of infected trees.

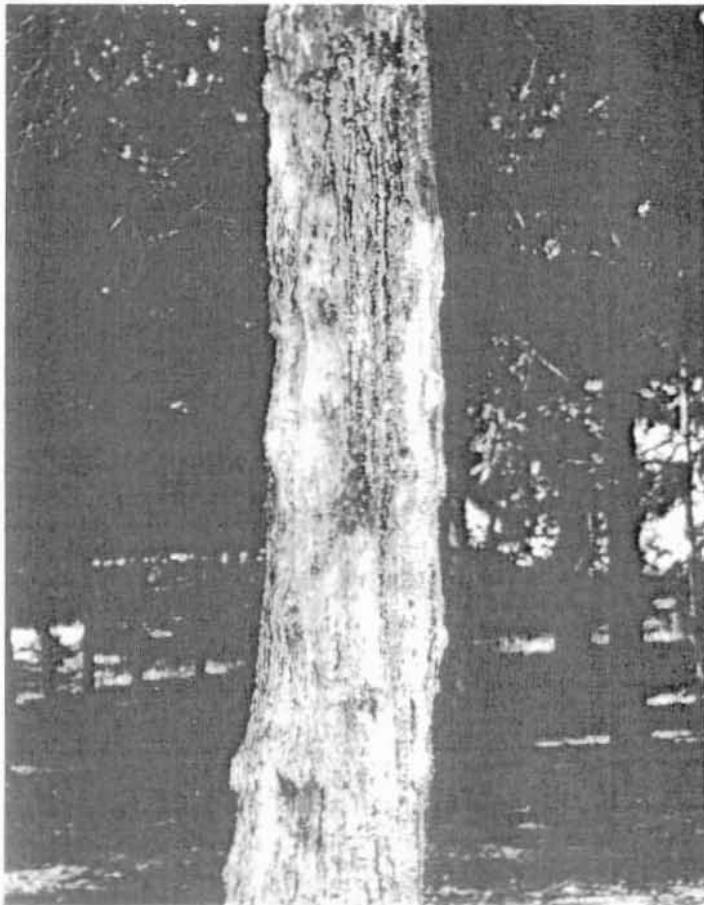


Figure 3. White spruce infected by Valsa canker.

Table 7. Other forest diseases

Organism	Host(s)	Remarks
<i>Apiosporina morbosum</i> (Schw.) Th. and Syd.	ecCh	high incidence of infection at one location in Amabel Twp, Owen Sound District
<i>Armillaria mellea</i> (Vahl ex Fr.) Kummer	bF eC	occasional widely scattered small dead trees on Bruce Peninsula, Owen Sound District
<i>Cenangium ferruginosum</i> Fr. ex Fr.	ScP	organism found on a few dead tree tops in Holland Twp, Owen Sound District
<i>Ciborinia whetzeli</i> (Seaver) Seaver	tA lPo	light incidence of infection in St. Edmunds and Amabel twp, Owen Sound District
<i>Cronartium ribicola</i> J. C. Fisch.	wP	2.7% of trees infected in a plantation in Blanshard Twp, Wingham District
<i>Discella carbonacea</i> (Fr.) Berk. and Br.	W	high incidence of branch mortality on several trees in Bruce Twp, Owen Sound District
<i>Dothiorella quercina</i> (Cke. and Ell.) Sacc.	rO	light incidence of dead branch tips in Canatara Park, City of Sarnia
<i>Fomes annosus</i> (Fr.) Karst.	rP	status of this root rot unchanged in 1974
<i>Gymnosporangium clavipes</i> (Cke. and Pk.) Cke. and Pk.	Haw Se	high incidence of infection in Bruce Twp, Owen Sound District
<i>Monilinia fructicola</i> (Wint.) Honey	ecCh	high incidence of dead branch tips on several clumps in Bruce Twp, Owen Sound District; first herbarium record

(continued)

Table 7. Other forest diseases (concluded)

Organism	Host(s)	Remarks
<i>Pollaccia radiosa</i> (Lib.) Bald. and Cif.	eCo	trace infection in one cottonwood seedbed at the St. Williams Forest Nursery
<i>Polyporus tomentosus</i> Fr.	wS	This rot found in roots of a living tree in the Grey Main Tract in Owen Sound District
<i>Sphaeropsis ellissi</i> Sacc.	ScP	organism found on dead needles of 3-0 stock at the St. Williams Forest Nursery
<i>Trichoderma viridae</i> Pers. ex Fries	bF	organism appeared in roots of one dead tree, Collingwood Twp, Owen Sound District

APPENDIX

SOUTHWESTERN REGION

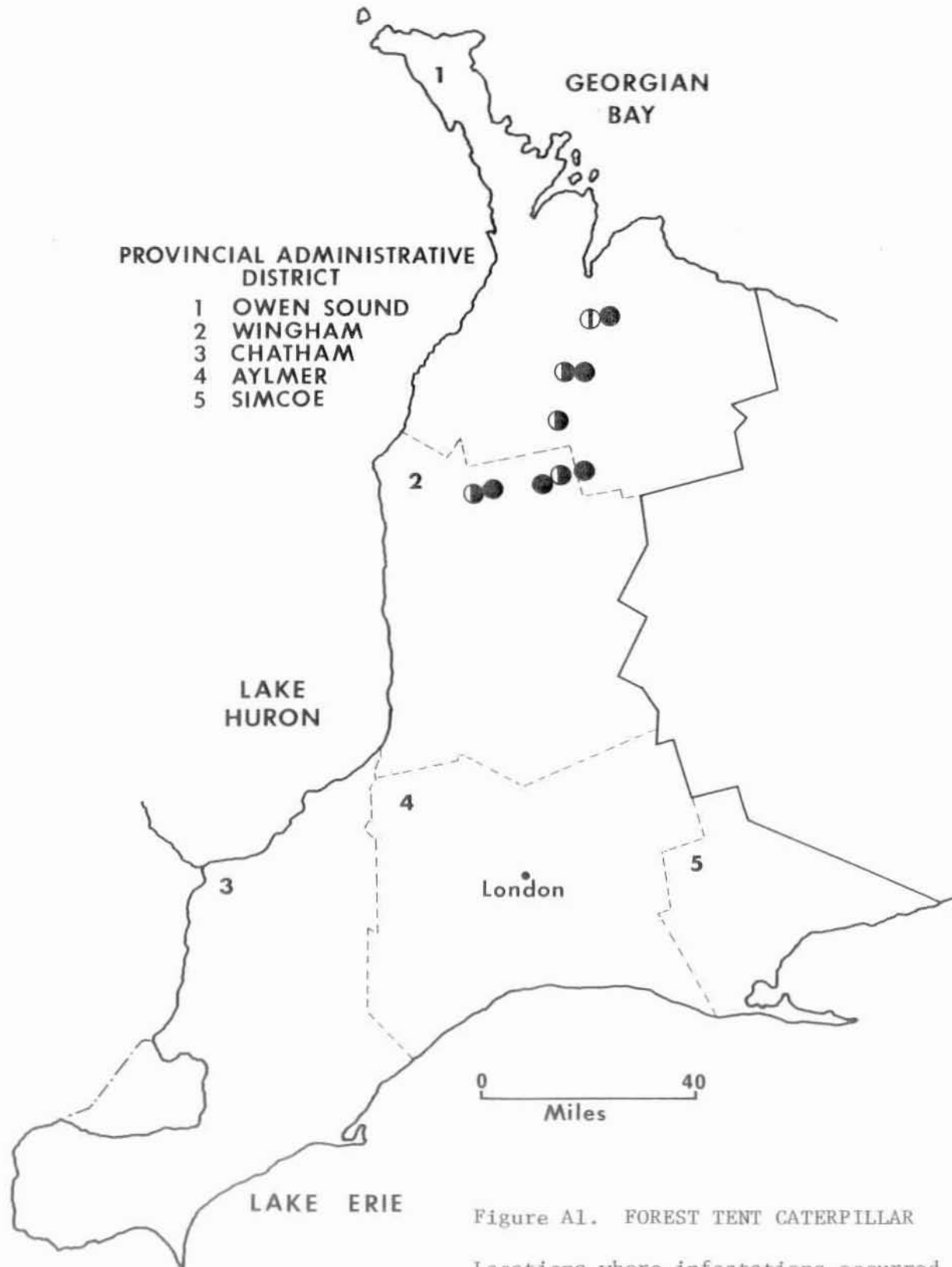


Figure A1. FOREST TENT CATERPILLAR

Locations where infestations occurred on sugar maple in 1974

- Light infestation ○
- Medium infestation ◐
- Heavy infestation ●