

FOREST INSECT AND DISEASE SURVEYS
IN THE SOUTHWESTERN SURVEY REGION, 1971

(FOREST DISTRICTS: LAKE SIMCOE, LAKE HURON AND LAKE ERIE)

R. L. BOWSER AND V. JANSONS

GREAT LAKES FOREST RESEARCH CENTRE
SAULT STE. MARIE, ONTARIO

INFORMATION REPORT O-X-158

CANADIAN FORESTRY SERVICE
DEPARTMENT OF THE ENVIRONMENT

APRIL 1972

*Copies of this report may be obtained
from*

*Director,
Great Lakes Forest Research Centre,
Canadian Forestry Service,
Department of the Environment,
Box 490, Sault Ste. Marie, Ontario.*

ACKNOWLEDGEMENT

The valuable assistance and cooperation received from personnel of the Ontario Department of Lands and Forests during the 1971 field season is gratefully acknowledged.

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INSECTS

An Oakworm, *Anisota finlaysoni* Riotte

This oakworm increased substantially in several localized areas in the Lake Huron and Lake Erie districts in 1971. The highest populations were observed in the Grimsby area where bur oak [*Quercus macrocarpa* Michx.] suffered moderate defoliation. Small pockets of light and moderate damage were recorded in the Binbrook-Dunville area, in the Campbellville area in Nassagaweya Township, and in the Milton, Oakville, and Dundas area in Trafalgar, Nelson, and Beverly townships, respectively.

Cedar Leaf Miners, *Argyresthia aureoargentella* Brower, *A. freyella* Wlsh., *A. thuiella* Pack., *Pulicalvaria thujella* Kft.

High populations of this complex of cedar leaf miners persisted over a large part of the Lake Simcoe District, in the central and southern parts of the Lake Huron District, and at scattered locations in the Lake Erie District. Particularly heavy damage was common in Halton County, and eastward across the southern half of the Lake Simcoe District. Branch tip mortality was evident, and light stem mortality was noted at several locations where heavy infestations have persisted for a number of years. Except for occasional small pockets of heavy infestation, damage to cedar stands in the northern part of the Region was generally of little significance.

Birch Skeletonizer, *Bucculatrix canadensisella* Cham.

Heavy infestations recurred in white birch [*Betula papyrifera* Marsh.] stands in all three districts of the Region (see Appendix, Fig. A1). High larval populations caused extensive foliar discoloration and premature leaf drop in the Barrie-Angus-Alliston area, the Uxbridge area, and in Scott and East Gwillimbury townships in the Lake Simcoe District.

Localized areas of severe skeletonizing were noted for the second consecutive year in the northern part of the Lake Huron District and in the Simcoe-Delhi area in the Lake Erie District.

Spruce Budworm, *Choristoneura fumiferana* (Clem.)

A considerable proportion of the field season was devoted to different types of surveys and sampling related to the determination of the spruce budworm situation in Ontario as a whole. In view of the magnitude and importance of the current outbreak in this province and to avoid a piecemeal presentation, our results will be presented, as in 1970, along with those of other survey regions in a single report, see appended Information Report O-X-163 by G. M. Howse *et al.*

Jack-pine Budworm, *Choristoneura pinus pinus* Free.

Larval populations were generally higher in the Lake Simcoe District, and more widespread in the Region than in recent years. In the above district, medium infestations were recorded in Scots pine [*Pinus sylvestris* L.] plantations in Tecumseh and Albion townships, where 268 and 293 larvae, respectively, were counted in 20 mat samples. Light infestations occurred in Uxbridge, Tosorontio, Adjala, and Innisfil townships, and in the Kiwanis plantation in Keppel Township, Lake Huron District.

Low numbers of larvae were noted at scattered locations throughout the Region.

Oak Leaf Shredder, *Croesia semipurpurana* (Kft.)

For the second consecutive year, larval populations of this tortricid on red oak [*Quercus rubra* L.] increased in the Lake Simcoe District. Severe foliar damage occurred at Methodist Point in Tiny Township, in the Barrie-Angus-Midhurst area, near Craighurst in Oro Township, and north of Mansfield in Tosorontio and Mulmur townships. Pockets of mature and immature trees in these areas suffered complete defoliation. Light to medium infestations recurred in the Uxbridge area and at several other locations north of Penetang.

Successive years of heavy defoliation may be a strong contributing factor in the crown deterioration and stem mortality that is occurring in some areas.

Maple Trumpet Skeletonizer, *Epinotia aceriella* Clem.

A significant increase in population levels and distribution of this skeletonizer was recorded in 1971. The frequency of occurrence of medium to heavy infestation increased substantially in sugar maple [*Acer saccharum* Marsh.] stands on the Bruce Peninsula and in the central and southern parts of the Lake Huron District. Approximately 50% foliar damage recurred in Colborne Township, and a new heavy infestation was noted in Dunwich Township in the Lake Erie District. Light and medium infestations were common throughout the Region.

Eastern Pine Shoot Borer, *Eucosma gloriola* Heinr.

A considerable increase in the extent of infestations occurred in the Region, and damage was of greater consequence because of the high number of leaders attacked.

The heaviest damage was recorded in white [*P. strobus* L.], red [*P. resinosa* Ait.] and Scots pine plantations in Vespra and Flos townships in the Lake Simcoe District, in Beverly, Brant, and Downie townships in the Lake Huron District, and in McGillivray Township in the Lake Erie District. Leader damage in areas examined varied from 2 to 16% (Table 1) compared with a high of 5% in 1970. The total number of attacks per 100 trees ranged from 25 to 384.

Table 1. Summary of shoot damage by the white pine shoot borer in the Southwestern Survey Region in 1971

Location (twp)	Tree species	Avg ht of trees (ft)	Total no. shoots infested	% of leaders attacked
Lake Simcoe District				
Vespra	rP	6	162	16
W. Gwillimbury	wP	10	25	2
Uxbridge	rP	6	31	3
Sunnidale	rP	6	38	6
Flos	wP	10	384	14
Lake Huron District				
Downie	wP	8	273	9
Brant	wP	8	182	13
Lake Erie District				
McGillivray	wP	8	39	8
Charlotteville	wP	10	54	2

Note: One hundred trees were examined at each location.

Saddled Prominent, *Heterocampa guttivitta* Wlk.

With a few exceptions, larval populations of this hardwood defoliator subsided abruptly in the Region. Heavy and medium infestations on Hope and Christian Islands in the Lake Simcoe District declined to light intensity. Damage was negligible in Tiny Township and on Beckwith Island, where medium infestations had been recorded in 1970. In the Lake Huron District, low numbers of larvae were observed in Lindsay and St. Edmunds townships, where severe defoliation of sugar maple occurred the previous year.

This outbreak of 4 years' duration is the longest ever recorded in Ontario, and as reported in 1970, the *Entomophthora* fungus was probably the main factor contributing to the sharp decline in 1971.

Fall Webworm, *Hyphantria cunea* (Drury)

Population levels of this common defoliator of hardwoods were generally higher than in recent years.

High populations recurred in Orillia Township in the Lake Simcoe District, where numerous green ash [*Fraxinus pennsylvanica* var. *subintegerrima* (Vahl) Fern.], cherry, and white birch trees were severely defoliated. Scattered, localized pockets of medium infestation were noted elsewhere in the District.

Generally, increases occurred in the southern part of the Lake Huron District, with the highest concentrations recorded in Waterloo, Oxford, and Brant counties. In contrast, larval populations virtually subsided in the town of Paris, where black walnut [*Juglans nigra* L.] suffered moderate defoliation in 1970.

For the second consecutive year, a heavy infestation east of Port Colborne in Humberstone Township in the Lake Erie District caused severe foliar damage to several host species. A new infestation severely defoliated a small stand of trembling aspen [*Populus tremuloides* Michx.], approximately 4 miles west of Port Colborne in Wainfleet Township, and moderate damage was noted in the Port Maitland-Dunville area. Scattered, light infestations were observed elsewhere in the central and eastern parts of the District.

A Maple Leaf Miner, *Lithocolletis aceriella* Clem.

A definite increase in larval populations was evident. Heavy infestations occurred on sugar maple understory and in the lower crowns of mature trees in Adjala Township, and at a number of points bordering on the east and south shores of Lake Simcoe in the Lake Simcoe District. Severe leaf mining was recorded in maple stands in St. Vincent, Waterloo, and Sullivan townships in the Lake Huron District, and in Windham Township in the Lake Erie District.

In contrast heavy infestations in Orillia and Mara townships in the Lake Simcoe District declined to light intensity.

Red-headed Pine Sawfly, *Neodiprion lecontei* (Fitch)

Pockets of moderate to heavy infestation persisted for the fourth consecutive year in a 150-acre red pine plantation in Vespra Township, in the Lake Simcoe District. In an attempt to control this infestation, a nuclear polyhedrosis virus was introduced in 1971. Elsewhere in the district, scattered colonies were noted in young red pine plantations in Mara and Sunnidale townships.

A Jack-pine Sawfly, *Neodiprion pratti banksianae* Roh.

The upward trend in larval populations noted in 1970 continued in 1971. The average number of colonies per infested tree increased at sample points in Melancthon and West Gwillimbury townships in the Lake Simcoe District (Table 2). At Base Borden a medium infestation occurred in a 5-acre plantation of 15-foot jack pine [*Pinus banksiana* Lamb.]. This population, intermingled with high numbers of *N. sertifer*, caused notable defoliation in the stand. In Euphrasia Township in the Lake Huron District, the number of colonies per 10-tree sample increased from 27 in 1970 to 63 in 1971. Fluctuating populations were of little consequence elsewhere in the Region.

Table 2. Summary of jack-pine sawfly colony counts at three points in the Southwestern Survey Region in 1971

Location (twp)	Avg ht sample trees (ft)	Avg no. colonies/ infested tree		% trees infested	
		1970	1971	1970	1971
Lake Simcoe District					
Melancthon	20	1.0	3.8	36	69
Tosorontio	15	4.7	3.3	100	100
W. Gwillimbury	15	2.4	4.1	58	65

Note: One hundred jack pine were examined at each location

European Pine Sawfly, *Neodiprion sertifer* Geoff.

A general increase in larval populations occurred in the Region for the third consecutive year (Table 3). In the Lake Simcoe District, severe defoliation of Scots and jack pine trees of all age classes was evident in the central and southern parts of Simcoe County, in untended Scots pine plantations in Mulmur and Mono townships in Dufferin County, in the northern part of Peel County, and in the Vivian-Uxbridge area in York and Ontario counties. Infestations on red pine were generally higher than in 1970.

Successful virus recovery programs in the Lake Simcoe District in 1969 and 1970 provided a substantial amount of sertifer virus. Several tree growers as well as Ontario Department of Lands and Forests personnel applied virus in 1971 (Fig. 1). Again, between 2 and 3 gallons of infected larvae were collected for use in future control programs.

In the Lake Huron District, the heaviest infestation occurred in a large Scots pine plantation in Normanby Township where numerous 8-foot trees were completely defoliated (Fig. 2). A heavy infestation recurred in the Meister Tract, Beverly Township, where a polyhedral virus was applied too late in 1970. Scattered pockets of heavy infestation were also observed in the Galt-Hamilton area, Wentworth County. In the Lake Erie District, a heavy infestation was observed in a Scots pine plantation in South Walsingham Township, and light to medium infestations were more common in 1971.

Table 3. Summary of European pine sawfly colony counts and degrees of infestation in the Southwestern Survey Region from 1969 to 1971. (Counts based on the examination of 100 trees at each location)

Location (twp)	Tree species	Avg ht trees (ft)	Avg no. colonies/ infested tree			% trees infested			Degree of infesta- tion
			1969	1970	1971	1969	1970	1971	
Lake Simcoe District									
Uxbridge	rP	6	1.5	1.0	1.0	57	19	14	Light
Adjala	scP	8	4.5	4.0	3.4	100	97	93	Heavy
Mulmur	scP	10	--	--	6.5	--	--	100	Heavy
Albion	scP	15	6.1	1.0	7.0	100	21	100	Heavy
Tosorontio	scP	15	1.1	1.5	2.0	21	32	43	Light
W. Gwillimbury	rP	3	--	--	1.5	--	--	61	Light
Lake Huron District									
Sullivan	scP	7	1.8	1.6	5.0	58	71	97	Medium
Eramosa	jP	6	2.3	2.6	2.2	84	91	56	Light
Amabel	scP	8	1.7	1.4	2.5	38	42	52	Light
Lake Erie District									
S. Walsingham	scP	6	--	--	9.8	--	--	100	Heavy

White Pine Weevil, *Pissodes strobi* (Peck)

Weevil population levels fluctuated considerably in the Region compared with 1970.

In the Lake Simcoe District, heavy attack was recorded in white pine plantations of various age classes in Whitchurch and Essa townships, and in a Norway spruce [*Picea abies* (L.) Karst.] planting in Oro Township (Table 4). Counts made at several other locations varied from 5 to 18%. As a control measure, the Ontario Department of Lands and Forests, Coldwater Division, employed several students for approximately 3 weeks clipping and burning infested leaders.

European Pine Sawfly, *Neodiprion sertifer* Geoff.

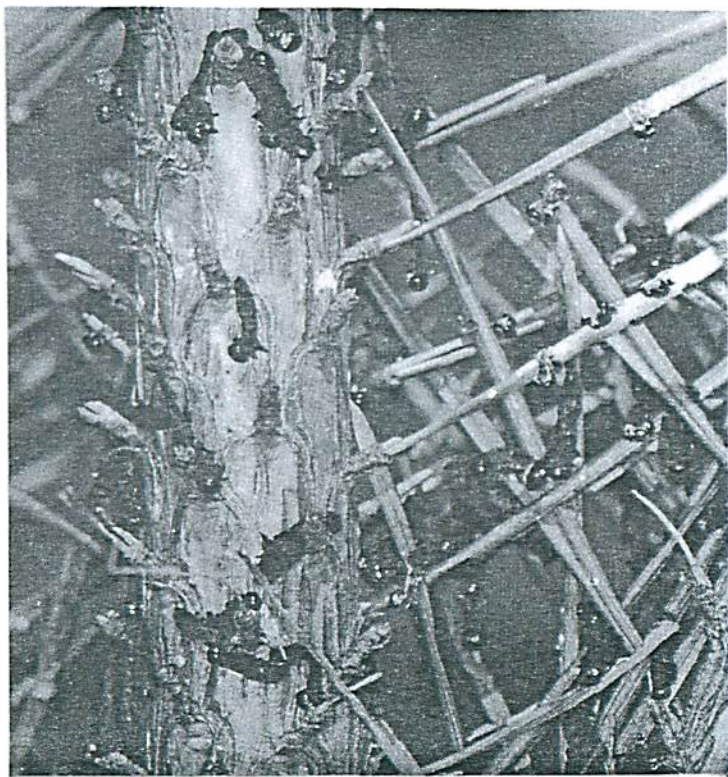


Fig. 1. Dead larvae killed by the polyhedrosis virus of *N. sertifer*.



Fig. 2. Severe defoliation of Scots pine.

A medium infestation persisted in a white pine plantation in Sullivan Township in the Lake Huron District for the fourth consecutive year. Elsewhere in the Region, damage was of little significance.

In 1971, experimental work to determine the effectiveness of a number of chemicals against the weevil was carried out in the Orr Lake Forest by personnel from the Chemical Control Research Institute, Ottawa. Results of this project will be reported separately.

Table 4. Summary of leader damage by white pine weevil in the Southwestern Survey Region from 1969 to 1971. (Based on the examination of 100 trees at each location)

Location (twp)	Host	Avg DBH (in.)	% trees infested		
			1969	1970	1971
Lake Simcoe District					
Whitchurch	wP	3	28	34	23
Matchedash	wP	7	13	9	14
Essa	wP	4	27	33	39
Oro	wP	5	8	6	11
Vespra	nS	6	11	9	16
E. Gwillimbury	wP	5	--	--	18
W. Gwillimbury	wP	4	--	--	5
Uxbridge	wP	5	--	--	7
Oro	nS	4	--	--	57
Lake Huron District					
Turnberry	wP	1	12	8	1
Kinloss	wP	2	3	4	4
Waterloo	wP	3	5	3	1
N. Dumfries	wP	2	2	2	5
Lake Erie District					
S. Walsingham	wP	2	12	6	1
Charlotteville	wP	3	7	3	0

Larch Sawfly, *Pristiphora erichsonii* Htg.

In the Lake Simcoe District, high populations continued to cause severe defoliation of European larch [*Larix decidua* Mill.] in Medonte, Flos, West Gwillimbury, and Whitchurch townships. In contrast, heavy infestations in the Barrie-Angus, Uxbridge, and Mono Mills areas declined to moderate. In the Lake Huron District, a heavy infestation recurred in a 10-acre tamarack [*L. laricina* (Du Roi) K. Koch] stand in

Lindsay Township. Light and medium infestations occurred in South Dumfries, Puslinch, Woolwich, Derby, and Minto townships. Light and moderate defoliation recurred in Charlotteville and South Walsingham townships in the Lake Erie District. Locations of these infestations are shown in the Appendix (Fig. A2).

Table 5. Other noteworthy insects

Insect	Host(s)	Remarks
<i>Acleris variana</i> Fern.	wS	Medium infestation in W. Garafraxa Twp, Lake Huron District; low populations common elsewhere in the Region.
<i>Altica populi</i> Woods	bPo	Scattered heavy infestations persisted in the Lake Simcoe District.
<i>Anchylopera burgessiana</i> Zell.	rO	Medium infestation at one location on Bruce Peninsula, Lake Huron District.
<i>Aphrophora parallela</i> (Say)	scP, wP	Light, medium, and heavy infestations were more common in the Region than in recent years.
<i>Arge pectoralis</i> (Leach.)	wB	Severe defoliation of scattered trees in Nottawasaga Twp in Lake Simcoe District and light to moderate defoliation common on Bruce Peninsula and in Grey County in Lake Huron District.
<i>Bucculatrix ainsliella</i> Murt.	rO	Caused moderate defoliation in South Dumfries Twp, Lake Huron District and in Mosa Twp of the Lake Erie District.
<i>Cecidomyia pinifoliae</i> Felt	wP	Caused 50% defoliation of host trees in a plantation at the Provincial Forestry Station in Charlotteville Twp, Lake Erie District.

(continued)

Table 5. Other noteworthy insects (continued)

Insect	Host(s)	Remarks
<i>Coleophora laricella</i> Hbn.	tL, eL	Generally low populations in the Region. Average number of larvae per 18-in. branch tip ranged between 1 and 26.6 in areas examined.
<i>Coleophora ostryae</i> Clem.	I	Light to medium infestation in Beverly Twp, Lake Huron District.
<i>Datana ministra</i> Dru.	wE, Ba	Caused moderate defoliation of host trees in South Cayuga Twp in Lake Erie District.
<i>Datana integerrima</i> G. & R.	Wa	Larval populations declined generally in the Region in 1971, with only occasional open-grown trees severely defoliated.
<i>Dioryctria disclusa</i> Heinr.	rP, scP jP	Light to moderate cone damage common in the Region.
<i>Dioryctria</i> sp. (<i>zimmermani</i> grp.)	rP	High larval populations continued to cause moderate to severe damage to the new shoots of host trees in Simcoe and Dufferin counties, Lake Simcoe District, and light damage occurred in Amabel Twp in Lake Huron District.
<i>Diprion frutetorum</i> F.	rP, scP jP	Generally low populations in the Region.
<i>Diprion hercyniae</i> (Htg.)	wS, nS	Generally low populations in the Region.
<i>Diprion similis</i> (Htg.)	scP, wP	Generally light populations throughout the Region; highest count was recorded in Pickering Twp, Lake Simcoe District, where 416 larvae were collected per 15-tray sample.

Table 5. Other noteworthy insects (continued)

Insect	Host(s)	Remarks
<i>Fenusa ulmi</i> Sund.	wE	Localized heavy infestations in the Region.
<i>Halisidota caryae</i> Harr.	Ba, bO	Common in Lincoln and Haldimand counties, Lake Erie District.
<i>Hylobius radicis</i> Buch.	scP	Infestations persisted north and east of a line between Barrie and Maple Valley causing notable Scots pine tree mortality at several locations (see frontispiece).
<i>Lepidosaphes ulmi</i> (Linn.)	bPo, Haw	Heavy infestations in Vespra and Mara twp, Lake Simcoe District, on hawthorn and balsam poplar respectively. Some branch tip mortality was evident on hawthorn.
<i>Malacosoma americanum</i> F.	Ch, Haw	Small pockets of light to heavy infestations common in the Region.
<i>Messa nana</i> Klug	wB	Light infestation in Uxbridge Twp, Lake Simcoe District.
<i>Paleacrita vernata</i> (Peck)	wE	A medium infestation recurred near Singhampton in Nottawasaga Twp, Lake Simcoe District. Populations declined in Holland Twp, Lake Huron District from medium to heavy in 1970 to light in 1971.
<i>Petrova albicapitana</i> (Busck)	jP	Low to moderate numbers in Tosorontio, King, Essa and Adjala twp in Lake Simcoe District.
<i>Plagiodera versicolora</i> Laich.	W	Caused severe foliar damage at numerous locations in the Region.

Table 5. Other noteworthy insects (concluded)

Insect	Host(s)	Remarks
<i>Pleroneura borealis</i> Felt	bF	Approx. 60% of the buds of balsam fir trees were infested at one location in Nottawasaga Twp in Lake Simcoe District.
<i>Profenusa lucifex</i> (Ross)	bO	A heavy infestation persisted in Pickering Twp, Lake Simcoe District.
<i>Psilocorsis querciella</i> Clem.	rO, wO	Light infestations at two points in Bosanquet Twp, Lake Erie District.
<i>Pyrrhalta luteola</i> Mull.	wE, cE	Caused moderate to severe defoliation in the London area, Lake Erie District, and in N. Dumfries Twp in Lake Huron District.
<i>Rhabdophaga swainei</i> Felt.	wS	Twenty percent of buds infested in a plantation in Bentinck Twp, Lake Huron Dist.
<i>Rhyacionia buoliana</i> Schiff.	rP	Generally low populations in the southern part of the Lake Huron District and a medium infestation recurred in Malahide Twp in Lake Erie District.
<i>Rhyacionia busckana</i> Hein. <i>Rhyacionia sonia</i> Miller	jP	Caused moderate tip mortality in Tosorontio, Essa, Oro and Whitchurch twp, Lake Simcoe District.
<i>Zeiraphera canadensis</i> Mut. & Free.	wS	Fifty percent of shoots infested at one point in Wellesley Twp, Lake Huron District and light damage occurred at several other locations.

TREE DISEASES

Armillaria Root Rot, *Armillaria mellea* (Vahl ex Fr.) Kummer

In the Lake Simcoe District, this organism continued to cause light stem mortality of young eastern white cedar [*Thuja occidentalis* L.] trees in hedgerows at several points in the Midhurst Nursery. East of the village of Baxter in Essa Township 2% of young red pine trees were killed, and in Flos Township small patches and occasional pole size trees were killed in a recently thinned red pine plantation. In Sunnidale Township, light stem mortality of young Scots pine regeneration occurred in the Brentwood area.

No stem mortality was recorded in a private red pine plantation in Oro Township where the disease had been active for several years.

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

A high incidence of this disease occurred in the central and northern parts of Simcoe and Ontario counties in the Lake Simcoe District, and in Grey and Bruce counties in the Lake Huron District, and caused heavy tree mortality at numerous locations. In the southern part of the Region, high numbers of the remaining elm trees were infected and killed. Several of the trees in Lincoln and Welland counties in the Lake Erie District suspected of being disease resistant in 1970, were infected in 1971.

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

Light infection occurred in a young red pine plantation in the Midhurst Nursery in Vespra Township, and in the Lake Simcoe District, a light infection in a jack pine plantation declined to trace intensity in 1971. In North Dumfries Township in the Lake Huron District, this pathogen virtually disappeared in a red pine plantation where a high infection was recorded for two consecutive years.

Scleroderris Canker, *Scleroderris lagerbergii* Gremmen

In 1971, extensive surveys were carried out in the Region for this pathogen. Numerous red and jack pine plantations were examined along with the Midhurst and St. Williams Provincial Nurseries. However, cultures from all suspected samples showed negative results.

Winter Drying

Winter drying was generally less severe. For example, in the Lake Simcoe District, the level of infection in white pine stands in West Gwillimbury and Melancthon townships declined from moderate and heavy in 1970 to light in 1971 (Table 6). Severe damage to Scots pine, white pine, eastern white cedar, and white spruce [*Picea glauca* (Moench) Voss] recurred along some major highways, particularly highways 400 and 11 north of Toronto. The latter was probably caused by a combination of winter drying, salt, and exposure.

Table 6. Summary of damage caused by winter drying in the Southwestern Survey Region in 1971

Location (twp)	Host	Tree ht (ft)	% incidence	Level of infection
Lake Simcoe District				
W. Gwillimbury	wP	12	92.5	Low
Melancthon	wP	4	90.0	Low
Amaranth	wS	6	52.2	Low

Red Pine Mortality

Mortality of red pine trees in several plantations in the Lake Huron District has been recorded for a number of years. The condition is most prevalent in 30- to 35-year-old planted stands, although some mortality of 80-year-old natural red pine is occurring in the Inverhuron Provincial Park, in Bruce Township.

In June 1971, a group from the Canadian Forestry Service, headed by Dr. Roy D. Whitney (a plant pathologist) and accompanied by personnel of the Ontario Department of Lands and Forests, visited two affected plantations in the vicinity of Chatsworth. The roots of several diseased and adjoining healthy trees were uncovered and examined for signs of root rot. No main and secondary roots showed signs of root rot but the wood was very wet. There was an apparent lack of healthy feeder roots. In the healthy trees examined, only about 25% of feeder roots were living, and in diseased trees they were mainly black, shrivelled, and dead. Soil samples obtained from these two sites are being analyzed.

The mortality in Inverhuron Provincial Park is different from that encountered in plantations. Shallow soil, heavy camper traffic, and possibly some root rot are suspected of being the main contributing factors.

Root and Butt Rots of Spruce and Fir

In 1971, special emphasis was placed on determining the extent and intensity of this problem, and the associated causal pathogens. Selection of stands to be examined was based on apparent stand openings, or stands showing a definite state of decline. At each location, the roots of five trees, suspected of having root and butt rot, were examined and a sample from each infected root was cultured to determine the organism present. A total of nine locations, eight balsam fir [*Abies balsamea* (L.) Mill.], and one white spruce were examined in the Region.

In balsam fir stands, out of five trees examined, no root or butt rot was found in Vespra Township and only one tree was infected in Puslinch Township. In the remaining areas, the number of trees infected ranged from three to five. Although an abundance of root and butt rot was present in samples of balsam fir and white spruce in St. Edmunds Township, cultures from both species were sterile. The principal organisms recovered were *Armillaria mellea* (Vahl ex Fr.) Kummer, *Coniophora puteana* (Schum. ex Fr.) Karst., *Odontia bicolor* (Alb. and Schw. ex Fr.) Bres., *Polyporus balsameus* Pk. and *P. schweinitzii* Fr. (Table 7).

Table 7. Summary of root and butt rot organisms determined in the Southwestern Survey Region in 1971

Location (twp)	Host	Organisms recovered
Lake Simcoe District		
Melancthon	bF	<i>Armillaria mellea</i> <i>Coniophora puteana</i>
Nottawasaga	bF	<i>Armillaria mellea</i> <i>Odontia bicolor</i>
Lake Huron District		
Osprey	bF	<i>Polyporus balsameus</i> <i>Polyporus schweinitzii</i>

An Abiotic Condition of Hardwoods

An abiotic condition severely damaged the foliage of sugar maple trees in the Niagara Peninsula during the latter part of May. Strong dry winds over a prolonged period during the time the leaves were unfolding could have been a contributing factor. In some areas,

ash and oak were also lightly affected. Generally, affected leaves turned brown to black and withered up. Unaffected portions of leaves remained green and damage to individual trees was sporadic, and any one part of a tree might be damaged. Occasional, severely defoliated sugar maple trees leafed out again in some areas.

Oak Decline

Eleven stands of oak were evaluated in the Region to determine the extent and intensity of oak decline (see Appendix, Fig. A3). Trace to light branch mortality was recorded in most areas examined (Table 8). The condition was apparently more advanced in areas, particularly in the Lake Simcoe District, where a tortricid *Croesia semipurpurana* (Kft.) has defoliated the trees for several years. In 1969 and again in 1971, severe wilting and curling of leaves occurred in Canatara Park in the City of Sarnia. Suspected oak wilt samples from this area and from Rondeau Park, Harwich Township, showed no evidence of the causal organism. The cause of stem mortality in Tosorontio, Uxbridge, and Harwich townships was not determined in 1971 and will require further investigations in 1972.

Table 8. Summary of evaluations in oak stands to determine the extent and intensity of oak decline in the Southwestern Survey Region in 1971

Location (twp)	Host	% incidence	Level of infection	% current mortality
Lake Simcoe District				
Vespra	r0	22.5	Low	0
Tosorontio	r0	70.0	Low	5
Uxbridge	r0	52.5	Low	5
Uxbridge	r0	7.5	Low	0
Oro	r0	Trace	Low	0
Lake Huron District				
N. Dumfries	r0, w0	92.0	Low	0
Lake Erie District				
Mossa	r0, w0	46.0	Low	0
Bosanquet	r0, w0	40.0	Low	0
Charlotteville	r0	85.0	Low	0
Sarnia	r0, w0	90.0	Low	0
Harwich	r0	80.0	Low	3

Beech Scale Nectria

In 1971, special surveys were carried out to determine the presence or absence of beech scale nectria (see Appendix, Fig. A3). Evaluations were made in beech stands at 10 locations, and observations were made in other areas in the Region. Although beech decline was common in several areas examined, the causal fungus of beech scale nectria, *Nectria coccinea* var. *faginata*, was not found.

The scale insect *Cryptococcus fagi*, often associated with *N. coccinea* var. *faginata*, was not identified in collections submitted to the Forest Insect Survey. The scale *Xylococcus betulae* was found in varying degrees of infestation in most areas examined.

Table 9. Other noteworthy diseases

Organism	Host(s)	Remarks
<i>Cenangium abietis</i> (Pers.) Rehm	rP, jP	Associated with branch mortality in Flos Twp, Lake Simcoe District.
<i>Ciborinia whetzeli</i> (Seaver) Seaver	tA	Trace infections in the Region.
<i>Cronartium ribicola</i> J. C. Fischer	wP	Common in the Region; no significant change.
<i>Cytospora</i> sp.	Be	Associated with heavy branch mortality in Blenheim Twp, Lake Huron District.
<i>Fomes annosus</i> (Fr.) Karst.	rP, jP wP	Caused considerable stem mortality in Flos Twp, and light in Uxbridge Twp, Lake Simcoe District.
<i>Fomes pini</i> (Brot. ex Fr.) Karst.	eL	Associated with stem mortality at Midhurst Forest Nursery, Lake Simcoe District.
<i>Fusarium</i> sp.	Hi	Associated with stem cankers in numerous stands in Lambton County, Lake Erie District.
<i>Gymnosporangium clavipes</i> (Cke. & Pk.) Cke. & Pk.	rJ	Medium infections of this rust in the Region.

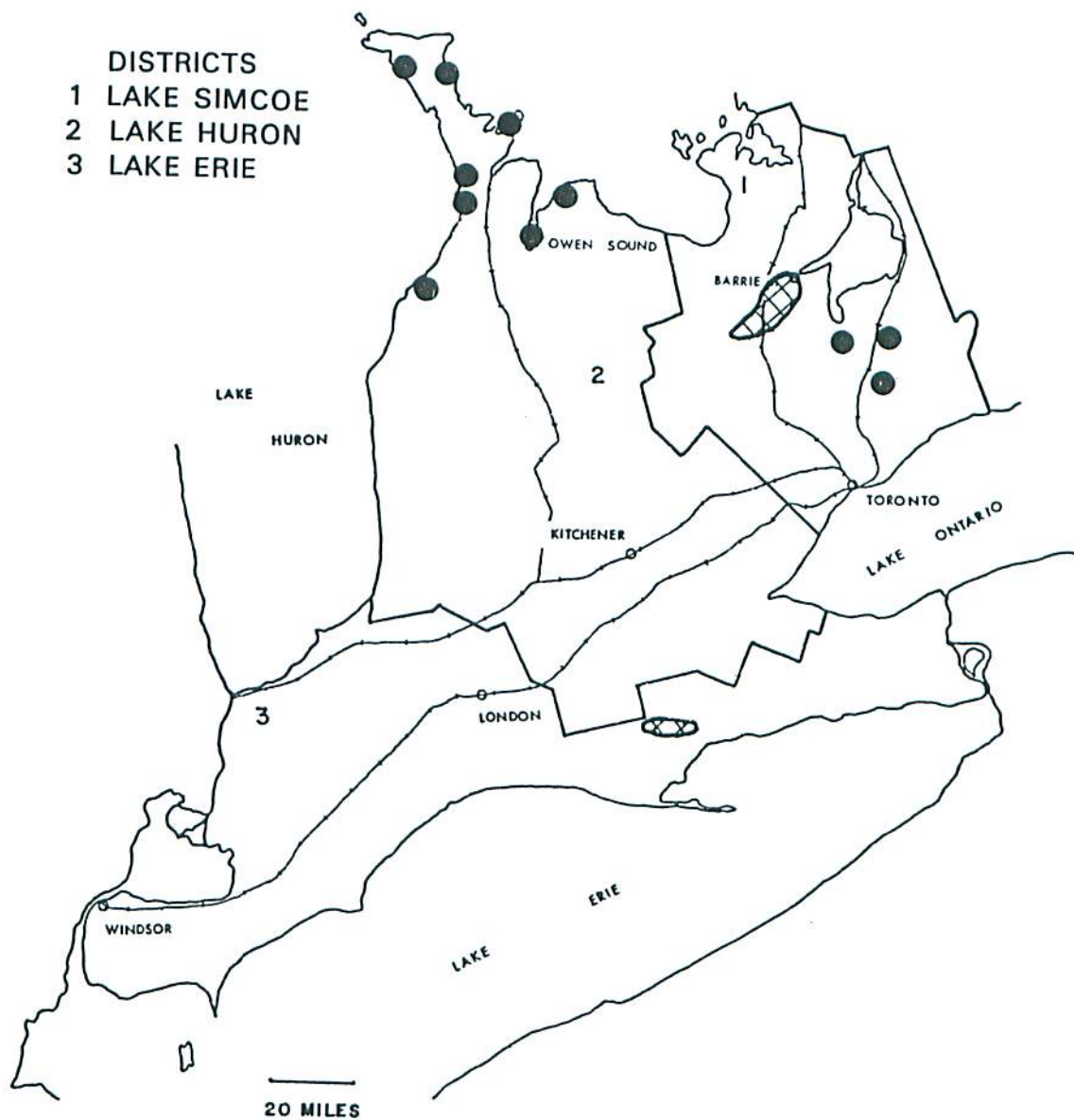
(continued)

Table 9. Other noteworthy diseases (concluded)

Organism	Host(s)	Remarks
<i>Gymnosporangium globosum</i> Farl.	Haw	Rust common on scattered trees in Medonte and Vespra twp, Lake Simcoe District.
<i>Leucostigma kunzei</i> (Fr.) Munk	wS	Moderate level of infection recurred in Vespra Twp, Lake Simcoe District.
<i>Pollacia radiosa</i> (Lib.) Bald. & Cif.	tA	Low incidence of infected shoots in Lake Huron District.
<i>Polyporus schweinitzii</i> Fr.	wP	Light at scattered locations in the Region.
<i>Uncinula salicis</i> (DC.) Wint.	bPo	Heavy on lower branches in Vespra Twp, Lake Simcoe District.

APPENDIX

SOUTHWESTERN SURVEY REGION



BIRCH SKELETONIZER

Areas within which infestations occurred in 1971

Legend



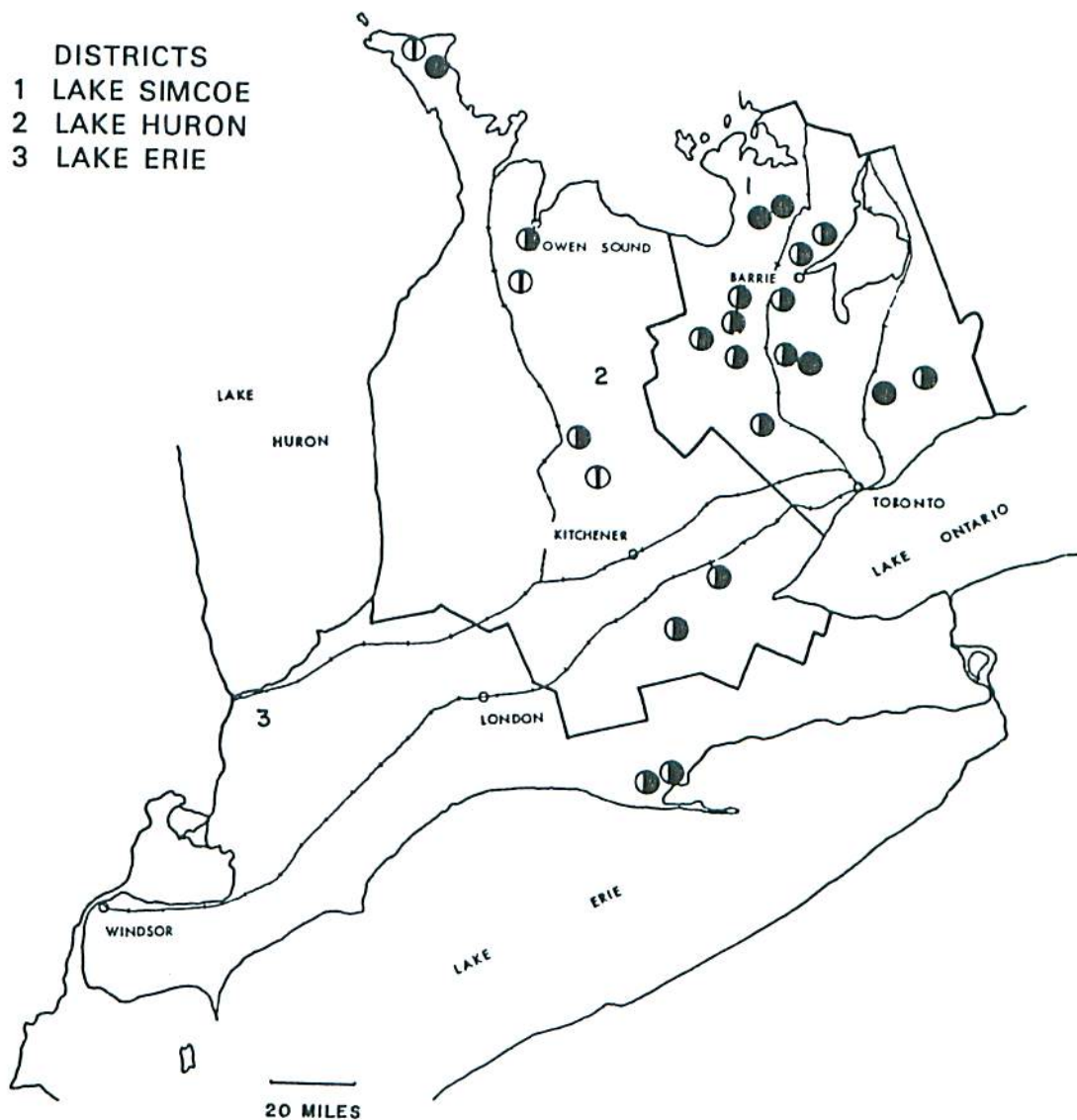
Moderate to severe skeletonizing ...  or 

FIG. A1

SOUTHWESTERN SURVEY REGION

- DISTRICTS
1 LAKE SIMCOE
2 LAKE HURON
3 LAKE ERIE



LARCH SAWFLY

Locations where infestations occurred in 1971

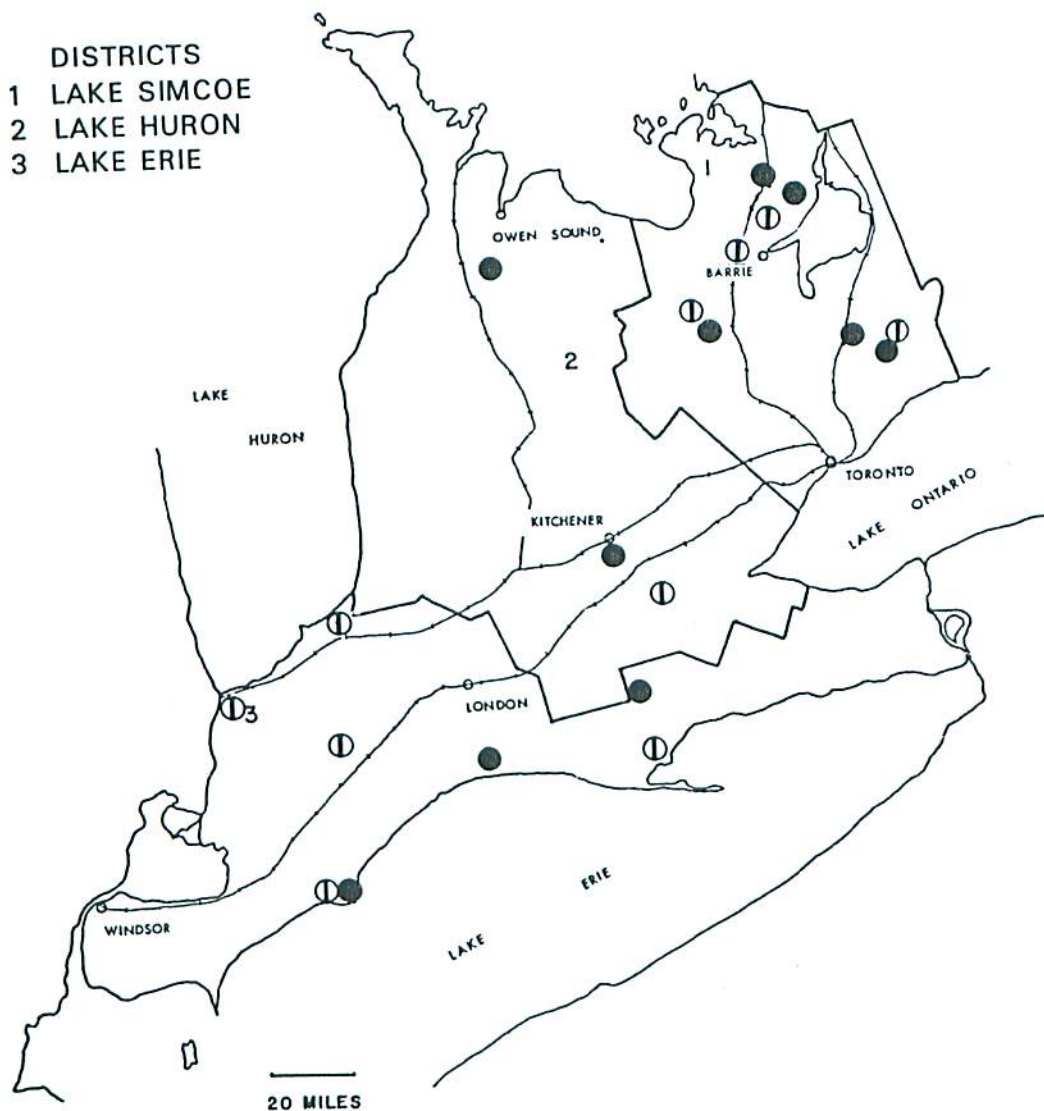
Legend

- Severe defoliation ●
Moderate defoliation ◐
Light defoliation ○

FIG. A2

SOUTHWESTERN SURVEY REGION

- DISTRICTS
 1 LAKE SIMCOE
 2 LAKE HURON
 3 LAKE ERIE



Areas where an intensive search was made for Oak Wilt and Beech Scale Nectria in the Southwestern Survey Region in 1971. Neither of these introduced pest problems was found.

Detection Study Areas for

Oak Wilt ⓪

Beech Scale Nectria ●

FIG. A3