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

K. C. HALL, W. D. BIGGS AND L. S. MACLEOD

GREAT LAKES FOREST RESEARCH CENTRE

SAULT STE. MARIE, ONTARIO

INFORMATION REPORT O-X-223

CANADIAN FORESTRY SERVICE

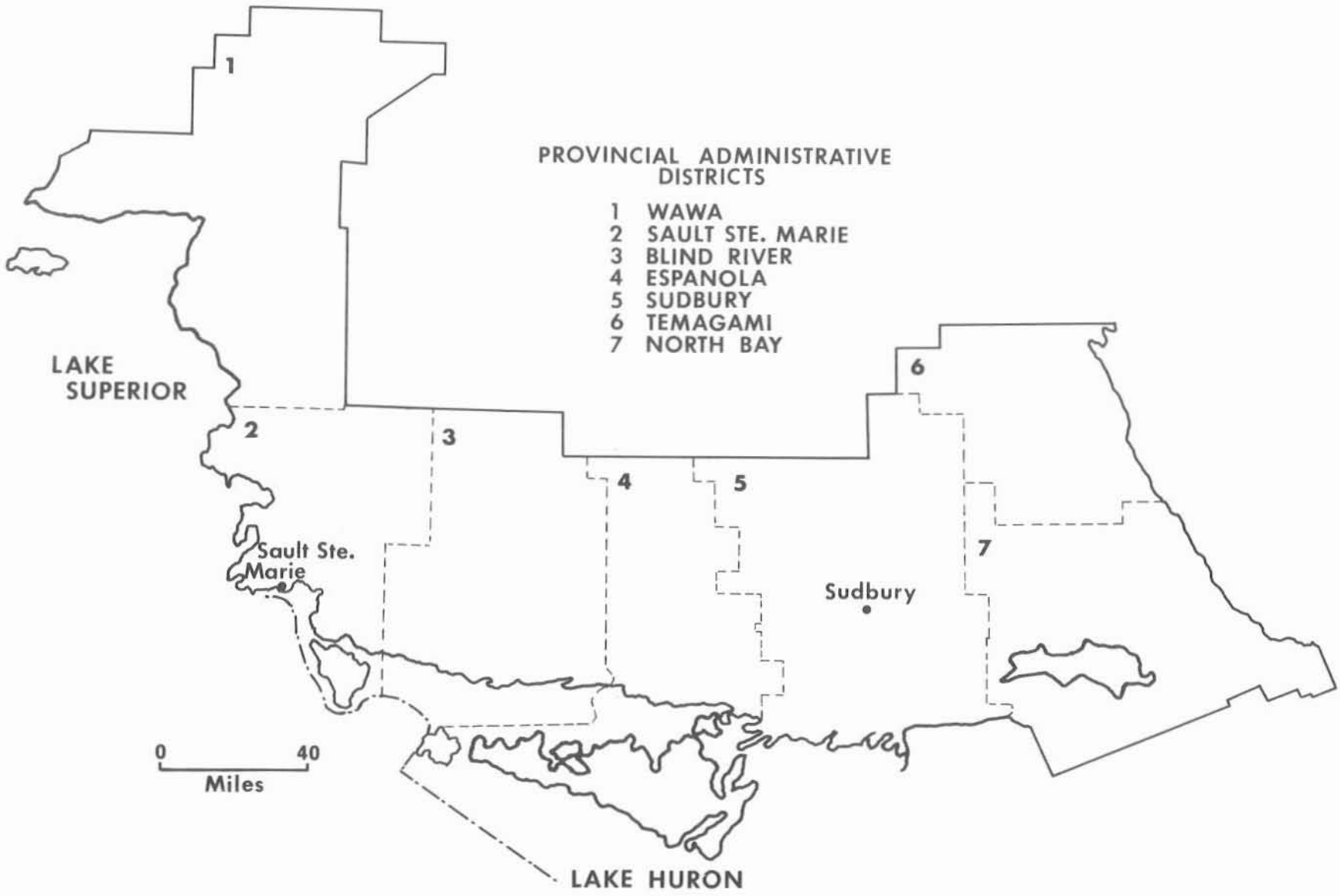
DEPARTMENT OF THE ENVIRONMENT

APRIL 1975

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.
P6A 5M7

NORTHEASTERN REGION



ACKNOWLEDGEMENTS

The assistance and excellent cooperation extended by personnel of the Ontario Ministry of Natural Resources and woods operating companies in 1974 are gratefully acknowledged.

Frontispiece. Red pine branch showing typical damage caused by *Gremmeniella abietina* (Lagerb.) Morelet (≡ *Scleroderris lagerbergii* Gremmen)

SURVEY HIGHLIGHTS

This report describes forest insect and tree diseases in the Northeastern Region, which comprises the Temagami, North Bay, Sudbury, Espanola, Blind River, Sault Ste. Marie and Wawa districts.

Spruce budworm populations persisted at a high level and continued to spread into new areas. Major extensions in the boundaries of moderate-to-severe infestation occurred in Temagami, North Bay and Espanola districts and smaller extensions were mapped in Sudbury, Blind River, Sault Ste. Marie and Wawa districts. Mortality of balsam fir and spruce was evident in varying degrees in parts of the Region. Spraying operations were carried out at several locations in Lake Superior Park to minimize budworm damage in recreational areas. The forest tent caterpillar outbreak increased in the eastern part of the Region and is expected to spread into new areas in 1975. Heavy defoliation of mature birch and maple by the basswood looper was mapped in a large area of Lake Superior Park. The greenstriped mapleworm caused heavy defoliation of maple in numerous locations in Temagami and North Bay districts. Jack pine budworm infestations were detected in two areas of Blind River District, European pine sawfly numbers increased somewhat on Manitoulin Island and Dimorphopteryx sawfly defoliated yellow birch in parts of the Sault Ste. Marie District.

Elm mortality caused by the Dutch elm disease became more obvious throughout the southern part of the Region. Scleroderris canker continued to be of special importance in the establishment of pine growing stock.

K. C. Hall
Supervisor
Northeastern Region

TABLE OF CONTENTS

(continued)

TABLE OF CONTENTS (concluded)

INSECTS

Greenstriped Mapleworm, *Anisota rubicunda* Fabr.

The largest pockets of heavy defoliation caused by this insect occurred in Lyman, Hammell, Notman, Osborne, Stewart, Merrick and Cameron townships in the North Bay District (see Appendix, Fig. A1). In addition, small scattered heavy infestations were mapped in McCallum, Fell, McAuslan, Wyse, Garrow, and Clarkson townships in North Bay District, and in Coleman Township in Temagami District. The heavy infestation present in 1973 in the Tyson Lake area in Sudbury District persisted at a comparable size and level in 1974.

Light-to-moderate infestations were observed in scattered stands of maple (*Acer saccharum* Marsh. and *A. rubrum* L.) in Dill Township, Sudbury District; in Butler Township, North Bay District; and in Bridgland Township, Blind River District. Small numbers of larvae were found at numerous other sampling points in the Region.

The only evident exception to the general population increase occurred on Cockburn Island in the Espanola District, where the severe defoliation of 1973 failed to recur.

Mortality of red maple occurred throughout an area of approximately 960 acres (384 ha) in Merrick Township, southwest of Little Tomiko Lake, in North Bay District. Light infestation was first observed in this area in 1969; by 1970 infestation was heavy, and it remained heavy through to 1974.

Pine Spittle Bug, *Aphrophora parallela* (Say)

Infestations persisted and intensified on Scots pine (*Pinus sylvestris* L.) on Manitoulin Island. In Gordon and Carnarvon townships, infestations that were moderate in 1973 increased to heavy intensity, and in Dawson, Billings and Sanfield townships light populations increased to moderate in 1974. Small numbers were found elsewhere in the Region.

Ugly-nest Caterpillar, *Archips cerasivoranus* (Fitch)

Hundreds of the unsightly feeding tents made by this insect were present along the Batchawana Village road in the Sault Ste. Marie District. Colonies occurred commonly at numerous other locations in the Region. Another problem area occurred in French Township, North Bay District.

Large Aspen Tortrix, *Choristoneura conflictana* Wlk.

Although heavy infestations of this aspen (*Populus* spp.) defoliator have persisted in the Temagami and North Bay districts, they have declined in intensity since 1973 in the Sudbury and Espanola districts.

Obvious defoliation was mapped in Barr, Firstbrook, Bucke, Brigstocke, Gillies Limit, South Lorrain, Hebert, Eldridge, Hartle and Olive townships in Temagami District, and in Gooderham, Hammell, LaSalle, Osborne, McAuslan, Garrow, Stewart, Lockhart and McNish townships in North Bay District. Smaller areas of defoliation were observed in Antrim and Moncrieff townships in the Sudbury District, and in Nairn, Barrie Island, Campbell, Billings, Carnarvon and Tehkummah townships in the Espanola District (see Appendix, Fig. A2). Elsewhere in the Region damage levels were low.

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.

Jack Pine Budworm, *Choristoneura pinus pinus* Free.

An increase in populations of the jack pine budworm was evident in several areas. The highest populations were found in two areas in Blind River District. A small pocket of light-to-heavy damage occurred in Kirkwood Township in an area of approximately 200 acres (80 ha). Jack pine (*Pinus banksiana* Lamb.) comprised about 30% of the stand and suffered the heaviest defoliation; red pine (*Pinus resinosa* Ait.), the other component, was only lightly infested. In Rose Township, jack pine in an area of 70 acres (28 ha) suffered light-to-heavy damage. In both areas defoliation was spotty, with some trees heavily defoliated and others only lightly damaged. The last occurrence of this insect in infestation proportions in these areas was in 1969. In the Wawa District a light infestation was present in a natural jack pine stand in Township 28, Range 23. Small numbers of insects were found at several other locations in the Region.

Larch Casebearer, *Coleophora laricella* Hbn.

Population levels of this insect increased in the Sault Ste. Marie and Temagami districts. At the Garden River Indian Reserve in the Sault Ste. Marie District, quantitative sampling showed the first increase in population levels since 1969 (Table 1). Small increases were also noted on small-diameter hosts at several locations in Hilton Township on St. Joseph Island. In the Temagami District, light damage was common in the upper crowns of most larch (*Larix* spp.) stands.

Table 1. Summary of larch casebearer counts in the Sault Ste. Marie District from 1967 to 1974 (Counts were based on the examination of four 18-in. branch tips from each of four trees.)

Location	Avg DBH of sample trees (in.)[a]	Avg no. of larvae per branch tip							
		1967	1968	1969	1970	1971	1972	1973	1974
Garden River Indian Reserve	10	4.5	122.1	90.3	20	18.3	1.4	.87	3.5

[a] 1 in. = 2.54 cm

Cone Beetles, *Conophthorus coniperda* (Schz.) and *C. resinosae* Hopk.

Early damage by these beetles is evidenced by the presence of drooping new shoots. Later the twigs break off at the point of entry and fall to the ground. High numbers persisted in mature and overmature white pine (*Pinus strobus* L.) and red pine stands in Temagami District. Extensive bud and twig mining and drop occurred in stands along lakeshores at many locations in late August. Early attack by *C. resinosae* caused extensive mortality to the developing shoots of red pine reproduction at several points on Lake Temagami in Temagami District; in Long Township, Blind River District; and in Victoria Township, Espanola District.

Oak Leaftier, *Croesia semipurpurana* (Kft.)

Generally, the amount of damage caused by this insect to oak (*Quercus* spp.) trees was much the same as in 1973. Heavy defoliation occurred along the Mississauga River and in the town of Blind River in the Blind River District. Moderate-to-heavy defoliation was present on St. Joseph Island in the Sault Ste. Marie District, and in Gordon, Barrie Island and Robinson townships on Manitoulin Island, Espanola District. Light-to-moderate populations persisted on scattered host trees on the Garden River Indian Reserve, Sault Ste. Marie District, and light damage was found in Howland Township near the town of Little Current, Espanola District.

A Birch Sawfly, *Dimorphopteryx melanognathus* Roh.

For the second consecutive year high populations of this sawfly occurred in the Sault Ste. Marie District and caused severe defoliation of mature yellow birch (*Betula alleghaniensis* Britton) along the

Batchawana River near the Tribag Mine and along Highway 17 north of Pancake Bay. Outbreaks of this insect have occurred periodically in this area for the past 16 years with the interval between outbreaks being governed by the length of larval diapause which varies from 1 to at least 5 years.

Basswood Looper, *Erannis tiliaria* Harr.

This insect (Fig. 1) caused heavy defoliation to mature maple and birch stands throughout an area of approximately 50 sq. miles (129.5 sq. km) in Lake Superior Park, Wawa District. The infested area extended as a band 3 miles (3.9 km) wide along the west side of Township 30, Range 19; Township 30, Range 20; and Township 30, Range 21 (see Appendix, Fig. A3). Defoliation throughout this area ranged from 40% to 90%. Understory deciduous trees within the heavy infestation and trees of small diameter in a large surrounding area suffered heavy defoliation. In 1973, high numbers of this insect had been found on small-diameter hosts in Township 30, Range 18 and light populations had been observed at several other locations. A large number of moths were reported in the town of Wawa in September, 1974, and were presumed to be adults of the basswood looper.

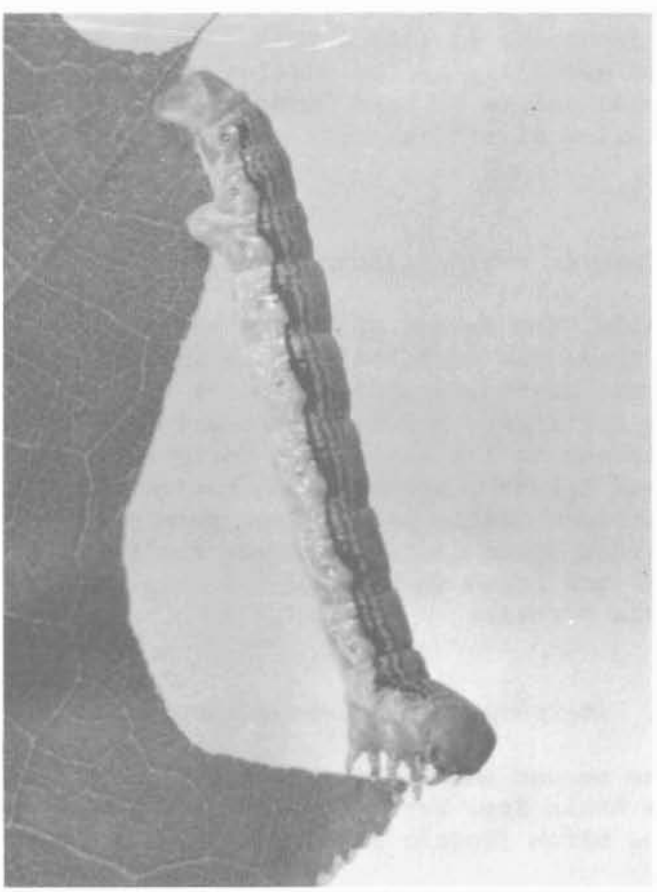


Figure 1. Basswood looper larva.

Birch Leafminer, *Fenusa pusilla* (Lep.)

Severe mining of foliage was observed commonly on small, open-grown, and ornamental birch in the central and eastern portions of the Region. Severe defoliation was observed along the Veuve River, west of the village of Hagar, Sudbury District, where in excess of 60% of the leaves were mined. Moderate-to-severe damage occurred in Phelps, Bonfield and Widdifield townships, North Bay District, and throughout the Temagami District. Light-to-moderate defoliation was observed in Rayside Township, Sudbury District, and in the townships of Victoria, Nairn and Salter and at various locations on Manitoulin Island in the Espanola District. Light browning was found at other locations throughout the Region.

American Aspen Beetle, *Gonioctena americana* (Schaef.)

The highest populations of these beetles were found in scattered pockets of trembling aspen (*Populus tremuloides* Michx.) regeneration in the townships of Bucke, Coleman, Firstbrook and Hudson in Temagami District where defoliation generally exceeded 75%. Light-to-moderate defoliation was observed at many locations in the north part of Temagami District, and in Dowling and Moncrieff townships in the Sudbury District. Small numbers were found at numerous other locations in the Region.

Fall Webworm, *Hyphantria cunea* Dru.

The occurrence of large amounts of webbing was very noticeable in and around Beaucage Point on Indian Reserve No. 10 in the North Bay District. This infestation has increased in size and intensity since it was last reported in 1973. Black ash (*Fraxinus nigra* Marsh.) and white elm (*Ulmus americana* L.) were the major species encompassed by the silken webbing, with some of the smaller trees being completely covered (Fig. 2). Elsewhere in the Region scattered colonies of insects were common on a variety of host trees.

Aspen Blotchminer, *Lithocolletis ontario* Free.

High populations of this miner persisted at scattered locations in Kirkwood, Rose and Thessalon townships in the Blind River District. The highest incidence of mining occurred primarily on small-diameter trees or on the lower branches of large host trees. Elsewhere in the Region low numbers were found.

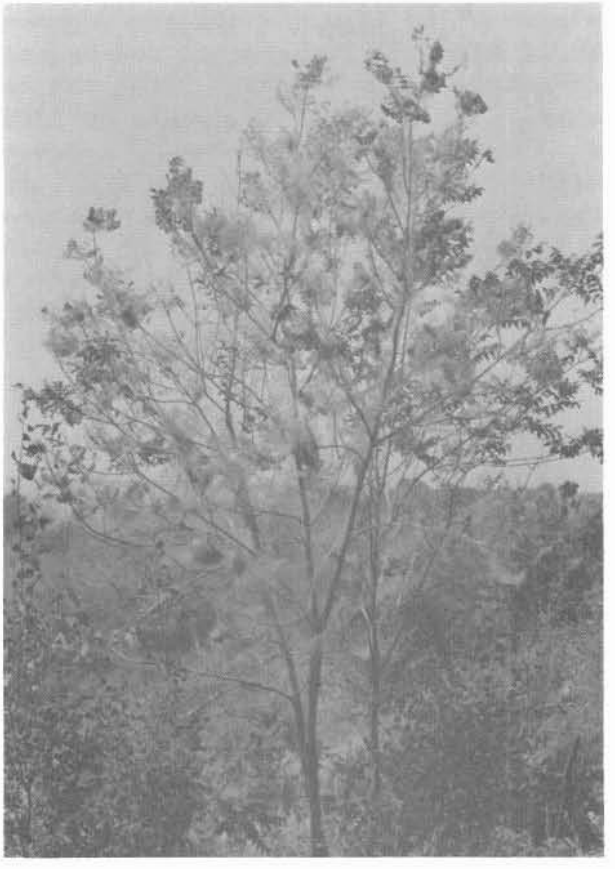


Figure 2. Fall webworm defoliation and webbing on black ash tree.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

An outbreak of this periodic defoliator continued to develop in the Region with large areas of defoliated aspen evident in Temagami, North Bay and Sudbury districts (see Appendix, Fig. A4). In Temagami District, damage was confined to the northeastern part along Lake Timiskaming, and in North Bay District mainly west and northwest of Lake Nipissing, with smaller pockets along the north shore. Defoliation was severe in the southeastern part of the Sudbury District, in the Chelmsford Valley area and in the Lake Panache area southwest of the city of Sudbury. One small pocket of severe defoliation was found in Truman Township in the Espanola District. Small numbers of larvae could be found elsewhere in the Temagami, Espanola, Sudbury and Sault Ste. Marie districts.

On the basis of egg-band surveys, heavy infestations are again forecast for those areas defoliated in 1974 (Table 2). Medium-to-heavy infestations are expected along the north shore of Lake Nipissing towards North Bay and in the Field–River Valley area, North Bay District; in the Blezard Valley area; and in an area east and south of the Lake Panache infestation, Sudbury District. Substantial numbers of forest tent caterpillar moths were observed in the city of Sudbury on July 15, 1974.

Table 2. Summary of forest tent caterpillar egg-band counts and infestation forecasts for 1975 in the Espanola, North Bay, Sudbury and Temagami districts (Counts were based on the examination of one to three trees per location.)

Location	Avg DBH (in.)[a]	No. of trees sampled	Avg no. of egg bands per tree	1975 infestation forecast[b]
Espanola District				
Nairn Twp (Hwy 17 at Nairn Centre)	4	3	1.0	L
Baldwin Twp (Hwy 17 west of Espanola turn)	4	3	0.3	L
Hallam Twp (Hwy 17 west of Webbwood)	4	3	0.0	N
Nairn Twp (Hwy 17 west of Nairn Centre)	4	3	0.0	N
North Bay District				
Indian Reserve #10 (Hwy 17)	5	3	7.7	S
Hugel Twp (Hwy 539 north of Warren)	4	3	6.0	S
Bastedo Twp (Hwy 64 north of Field	4	3	2.7	M
Crerar Twp (near River Valley)	4	3	1.7	L-M
Sudbury District				
Bigwood Twp (½ mile west of Rutter)	7	1	103.0	S
Graham Twp (Hwy 17 at the Vermilion River)	3	3	33.6	S
Casimir Twp (Hwy 535)	6	1	32.0	S
Balfour Twp (3 miles north of Chelmsford)	4	1	19.0	S
Blezard Twp (1 mile north of Blezard Valley)	5	1	17.0	S

(continued)

Table 2. Summary of Forest tent caterpillar egg-band counts and infestation forecasts for 1975 in the Espanola, North Bay, Sudbury and Temagami districts (Counts were based on the examination of one to three trees per location.) (concluded)

Location	Avg DBH (in.)[a]	No. of trees sampled	Avg no. of egg bands per tree	1975 infestation forecast[b]
Sudbury District (concluded)				
Dieppe Twp (near Panache Lake)	4	3	11.7	S
Waters Twp (near Lively turn)	4	3	6.3	M-S
Hagar Twp (2 miles south of Markstay)	5	3	3.0	M
Cascaden Twp (Windy Lake Prov. Park)	5	3	0.0	N
Awrey Twp (Hwy 17)	4	3	0.0	N
Servos Twp (Hwy 637)	4	3	0.0	N
Temagami District				
Harris Twp	4	1	41.0	S
Lorrain Twp	2	1	22.0	S
Coleman Twp	4	3	1.0	L
Gillies Limit Twp	5	3	0.0	N
Olive Twp	4	3	0.0	N
South Lorrain Twp	5	3	0.0	N
Strathy Twp	4	3	0.0	N

[a] 1 in. = 2.54 cm

[b] N = nil, L = light, M = moderate, S = severe

Redheaded Pine Sawfly, *Neodiprion locontei* (Fitch)

Light-to-moderate defoliation was observed in a small red pine plantation in May Township and on shelterbelt trees in Victoria Township, Espanola District. The infestation which has been active in the area immediately surrounding the city of North Bay waned in 1974, resulting in only light damage.

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

Increases in population levels were observed in seven of the eleven Scots pine (*Pinus sylvestris* L.) plantations in which counts were conducted on Manitoulin Island, Espanola District. Average numbers of colonies per tree increased at one location in each of Carnarvon and Sandfield townships at two locations in Dawson and Gordon townships, and on roadside trees in West Bay Indian Reserve (Table 3).

Noteworthy decreases in population levels were recorded in one plantation in Billings Township and in two plantations in Carnarvon Township, with reductions of a lesser degree in one plantation in Dawson Township.

Low numbers were observed in the city of Sault Ste. Marie, and colonies were recorded for the first time in one plantation in Kirkwood Township, Blind River District.

Table 3. Summary of colony counts of European pine sawfly in Scots pine plantations on Manitoulin Island in 1973 and 1974

Location (twp)	Tree height (ft)[a]	No. of trees examined		Total no. of colonies		Avg no. of colonies/tree	
		1973	1974	1973	1974	1973	1974
Allan	25	100	-	36	-	.36	-
Billings	15	400	250	460	103	1.15	.41
Carnarvon	11	125	100	26	43	.21	.43
Carnarvon	15	100	100	148	39	1.48	.39
Carnarvon	5	100	100	1	0	.01	.00
Dawson	11	100	100	34	66	.34	.66
Dawson	11	300	300	85	109	.11	.36
Dawson	11	100	100	58	50	.58	.50
Gordon	10	250	100	519	103	2.06	1.03
Gordon	10	-	50	-	258	-	5.16
Sandfield	7	100	100	8	25	.08	.25
West Bay Indian Reserve	15	35	33	15	66	.43	2.00
West Bay Indian Reserve	20	-	23	-	26	-	1.13

[a] 1 ft = 0.30 m

Swaine Jack Pine Sawfly, *Neodiprion swainei* Midd.

This pest again caused appreciable defoliation of jack pine stands on lakeshores and islands in Banks, Temagami, Trethewey, Lady Evelyn and Willow Island lakes in the northern part of the Temagami District. Several spraying operations were carried out by cottage owners on Lake Temagami to control the insect.

Redheaded Jack Pine Sawfly, *Neodiprion virginianus* complex

There was an increase in population levels of this sawfly in 1974. Moderate feeding damage was found on planted jack pine in Robinson, Carnarvon and Burpee townships on Manitoulin Island. Light-to-moderate defoliation was observed on windbreak trees in Hallam Township in the Espanola District.

White Pine Weevil, *Pissodes strobi* Peck.

The incidence of weevil injury on young pine increased generally. In the Blind River District moderate-to-heavy leader damage occurred in all white pine stands sampled and ranged from 6.3% to 51%. Twelve of thirteen sample points for which quantitative information was available for comparison with damage in 1973 showed an increase (Table 4).

Table 4. Summary of damage caused by the white pine weevil in the Blind River and Espanola districts in 1973 and 1974

Location (twp)	Host	No. of trees sampled	Trees weevilled (%) 1973	1974
Blind River District				
Rose #1	wP	257	10.7	16.7
Rose #2 (sprayed 1973)	wp	177	7.0	16.4
Rose #5	wP	112	-	13.8
Rose #5 (sprayed 1973)	wP	102	5.0	9.8
Rose #6	wP	265	8.6	9.8
Kirkwood #3 (sprayed 1973)	wP	147	2.6	10.8
Kirkwood #3	wP	113	13.0	18.6
Kirkwood #5 (sprayed 1973)	wP	174	2.0	6.3
Kirkwood #6 (sprayed 1973)	wP	277	1.0	2.5
Kirkwood #6	wP	211	-	6.6
LeFroy #1	wP	116	15.3	9.4
Bridgland #1	wP	133	8.3	21.1

(continued)

Table 4. Summary of damage caused by the white pine weevil in the Blind River and Espanola districts in 1973 and 1974 (concluded)

Location (twp)	Host	No. of trees sampled	Trees weevilled (%) 1973	1974
Blind River District (concluded)				
Wells (private)	wP	100	25.0	27.0
Wells	wP	200	-	51.0
Patton	wP	298	-	18.4
Parkinson	wP	100	34.0	41.0
168	wP	300	6.6	17.0
Espanola District				
Foster	wP	100	22.0	26.0
Hallam	ScP	100	12.0	16.0
Merritt	wP	100	10.0	29.0
Mills	wP	100	-	0.0
Nairn	jP	100	8.0	3.0
Victoria	wP	100	-	30.0

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Noticeable defoliation of tamarack (*Larix laricina* [Du Roi] K. Koch) was observed in Espanola and Temagami districts. A small pocket of moderate-to-heavy defoliation occurred in Victoria Township, and scattered areas of light-to-moderate defoliation were present between the towns of Spanish and Webbwood in the Espanola District. Damage was moderate in Billings Township, and light in several other locations on Manitoulin Island. Lightly defoliated trees were observed at numerous locations in Temagami District. Elsewhere defoliation intensities were low.

Mountain Ash Sawfly, *Pristiphora geniculata* (Htg.)

The most severe damage caused by this insect could be observed along Highway 17 west of Wawa. Generally defoliation of mountain ash (*Sorbus americana* Marsh.) exceeded 60% and in the majority of cases complete stripping occurred. Moderate damage was common on ornamental trees in the town of Espanola. Elsewhere damage was generally light.

Table 5. Other forest insects

Insect	Host(s)	Remarks
Adelges abietis Linn.	wS	galls common at one location in Burpee Twp, Sudbury District
Cecidomyia reeksi Vock.	jP	moderate damage at Windy Lake Park, Sudbury District
Datana ministra Dru.	Se ecCh wB	common at several locations in Blind River District
Epinotia solandriana Linn.	tA wB	light damage in Banting, Best, Law and Strathy twp, and in central and southern parts of Temagami District
Eucordylea resinosae Free.	rP	moderate needle mining in Temagami—Lady Evelyn Lakes area, Temagami District
Exoteleia dodecella Linn.	ScP	first occurrence in Sault Ste. Marie District; this marked extension of distribution range
Malacosoma americanum F.	pCh ecCh	numerous tents on Manitoulin Island; colonies more frequent elsewhere in the Region
Nematus sp.	W	70% defoliation on scattered trees in Tilley Twp; colonies common in Sault Ste. Marie and Blind River districts
Neodiprion pratti banksianae Roh.	jP	light defoliation around Rabbit Lake in Riddell and Cassels twp, Temagami District
Okanagana rimosa (Say)	deciduous trees	numerous adults in MacLennan Twp, Sudbury District

(continued)

Table 5. Other forest insects (concluded)

Insect	Host(s)	Remarks
Phratora purpurea purpurea Brown	bPo	heavy browning on Indian Reserve #10, North Bay District; light damage in Salter and May twp and Manitoulin Island, Espanola District
Phyllobius oblongus Linn.	Hi M	light-to-moderate damage on understory hosts in Hodgins Twp; light elsewhere in Sault Ste. Marie District
Pikonema alaskensis (Roh.)	wS	moderate defoliation at one plantation in Foster Twp, and on individual ornamentals in the town of Espanola, Espanola District
Pleroneura brunneicornis Roh.	bF	heavy populations on small trees in Olive Twp; common elsewhere in Temagami District
Zeiraphera improbana (Walker)	tL	moderate damage to new shoots in conjunction with *C. fumiferana* in Beaucage Twp, North Bay District

TREE DISEASES

Eastern Dwarf Mistletoe, *Arceuthobium pusillum* Pk.

A moderate level of infection by this disease was found on open-grown white spruce (*Picea glauca* [Moench] Voss) in part of Carnarvon Township on Manitoulin Island, Espanola District. Trace-to-light levels were observed at various other locations in the Temagami District.

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

A survey to determine the fungi causing root rots in conifers 3-10 ft (1-3 m) tall was carried out in 1974 and 17 widely separated locations were carefully searched. Roots taken from recently dead or dying trees were submitted for culture; out of 38 samples cultured Armillaria root rot was the most common, occurring in 29 root sections. Other fungi cultured were *Scytinostroma galactina*, *Trichoderma vivide* and *Coryne sarcoides*.

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

Plots established in 1973 to measure the current rate of elm mortality were retallied one year later. An increase in incidence and mortality was observed across the southern part of the Region, except in Township 28, Range 16, Wawa District and in the town of Blind River, Blind River District (Table 6). Very high percentages of current mortality were recorded in Bright and Thessalon townships, Blind River District; Assiginack, Billings and Allan townships, Espanola District; Widdifield Township, North Bay District; and Johnson Township, Sault Ste. Marie District. The known range of this pathogen remained the same in the Region.

Table 6. Summary of current mortality caused by Dutch elm disease in 18 plots in the Northeastern Region in 1973 and 1974

Plot location	No. of living trees 1973	Annual rate of mortality 1973-1974 (%)
Blind River District		
Bright Twp	40	67.5
Blind River (town)	40	0.0
Twp 188	40	22.5
Thessalon Twp	38	58.0

(continued)

Table 6. Summary of current mortality caused by Dutch elm disease in 18 plots in the Northeastern Region in 1973 and 1974 (concluded)

Plot location	No. of living trees 1973	Annual rate of mortality 1973-1974 (%)
Espanola District		
Assiginack Twp	40	35.0
Billings & Allen Twp	40	32.5 (7)
Dawson Twp	40	0.0
Merritt Twp	40	12.5
Salter Twp	40	22.5 (1)
North Bay District		
Caldwell Twp	40	17.5
French Twp	40	2.5
North Bay (city)	40	40.0
South Himsworth Twp	40	12.5
Sault Ste. Marie District		
Macdonald Twp	40	17.5
Johnson Twp	40	50.0
Sudbury District		
Rayside Twp	40	12.5
Scollard Twp	30	23.3 (1)
Wawa District		
Twp 28, Rge 16	20	0.0

Note: Numbers within parentheses refer to trees that were cut and therefore were not considered in rate of mortality.

Ink Spot of Poplar, *Ciborinia whetzelii* (Seaver) Seaver

This organism was less prevalent than usual. The highest incidences recorded were in the southeastern part of North Bay District where moderate foliar damage was common. Pockets of light damage occurred in the Sudbury and Blind River districts and the southwestern part of the North Bay District.

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

An unusually high level of infection occurred in a small red pine plantation in Nipissing Township in the North Bay District. An evaluation revealed 75% loss of foliage on over half of the susceptible trees. The incidence elsewhere was very low.

Comandra Blister Rust, *Cronartium comandrae* Pk.

A mixed stand of jack pine, red pine and white pine in about equal proportions was found to be infected in the Garden River Indian Reserve in the Sault Ste. Marie District. Moderate incidence and light damage were evaluated in jack pine. Pure jack pine plantations in the immediate vicinity appeared free of the infection.

White Pine Blister Rust, *Cronartium ribicola* Fischer

Although this disease of white pine is widespread, infection levels have remained low at most sample points (Table 7). The only exception was in McLaren Township, North Bay District where moderate infection occurred. Infection was most common in branches at all sample points except in Thessalon Township where basal cankers occurred most frequently.

Table 7. Summary of incidence of white pine blister rust in the Northeastern Region in 1974 (Evaluations were based on the examination of 100 trees at each location.)

Location	Tree height (ft)[a]	Area affected (acres)[b]	Incidence (%)
Blind River District			
Parkinson Twp	6-15	100	2.0
Thessalon Twp	10-12	1	7.9
Sault Ste. Marie District			
Garden River Indian Reserve	10-12	5	2.8
Gaudette Twp	10-14	1	2.0
Sault Ste. Marie	6-15	2	6.0
Wawa District			
Twp 28, Rge 15	6	2	1.8

[a] 1 ft = 0.30 m

[b] 1 acre = 0.40 ha

Cherry Leaf Spot, *Cylindrosporium padi* (Lib.) Karst.

The incidence of this disease increased sharply in the Sault Ste. Marie and Wawa districts. Early symptoms of the disease appear as small purplish spots on the leaves. These spots later turn brown and fall out, giving the leaf a "shot hole" appearance. Premature leaf drop occurred in numerous clumps of cherry (*Prunus pensylvanica* L.f.) along Highway 17 from Batchawana Bay in Sault Ste. Marie District to Rabbit Blanket Lake in Wawa District. Incidence within the affected area ranged from 5% to 68%, with the highest values recorded on the Montreal Mining property. The disease was not observed elsewhere.

Western Gall Rust, *Endocronartium harknessii* (J.P. Moore) Y. Hiratsuki

A low incidence of this gall-forming rust was found at several widely separated locations at trace levels of infection. The presence of galls seemed confined to small-diameter planted jack pine, with infection confined mainly to branches. Yet many plantations of this type showed no evidence of the rust when examined.

Scleroderris Canker of Pine, *Gremmeniella abietina* (Lagerb.) Morelet
(≡ *Scleroderris lagerbergii* Gremmen)

Infection levels of this important disease varied in the Region (see Frontispiece).

Damage was most severe in the Kirkwood Management Unit, Blind River District. Incidence, based on assessments made in Kirkwood, Rose and LeFroy townships, averaged 53% and ranged from 19% to 100% (Table 8). Infection was found principally on branches; stem cankers occurred infrequently. Some tree mortality is expected in plantations of smaller hosts; however, the majority of plantations are of sufficient height that mortality will be confined to lower branches. Incidence in Parkinson Township declined on larger host trees; however, a high level of inoculum is present on small replantings. In townships 3A, 2A, W and V incidence was generally low in smaller trees and high in larger trees. Mortality in these established plantations is expected to be minimal. In Patton Township young plantations, the most susceptible to damage by the disease, were free of infection.

Moderate-to-high levels of infection were recorded in each of three locations in the North Bay and Sault Ste. Marie districts. Surveys in Salter Township, where sanitation has been carried out, yielded negative results.

Table 8. Summary of incidence of Scleroderris canker in the Northeastern Region in 1974

Location (Twp)	Host	Tree height (ft)[a]	Area affected (acres)[b]	Incidence (%)
Blind River District				
Kirkwood	jP	11	210	100
"	jP	6	14	44
"	jP	7	3.5	22
"	rP	11	6	38
Rose	jP	4	37	19.3
"	jP	4	2	65.1
"	jP	5	70	35.9
LeFroy	jP	11	13	100
1A	rP	8	10	1.3
Parkinson	rP	3	2	87
4D	rP	16	100	1.7
Patton	rP	1.5	2	0
"	rP	1.5	25	0
3A	rP	4	200	1
"	jP	25	150	1
"	rP	4	150	2
"	wP	3	100	0
"	rP	6	150	2
3A and 2A	rP	8	100	5
2A	rP	5	1	52
"	rP	8	300	2
"	rP	20	80	50
"	rP	20	100	10
"	rP	20	300	1
"	rP	19	400	0
W	rP	15	400	1
"	rP	20	200	60
"	rP	10	300	50
"	rP	6	100	50
V	rP	15	100	25
"	rP	4	50	5
"	rP	3	150	8
"	rP	3	200	20
Espanola District				
Salter	rP	33	25	0
North Bay District				
French	rP,jP	13	150	97
Boulter	rP	20	100	60
"	rP	25	100	20

(continued)

Table 8. Summary of incidence of Scleroderris canker in the Northeastern Region in 1974 (concluded)

Location (Twp)	Host	Tree height (ft)[a]	Area affected (acres)[b]	Incidence (%)
Sault Ste. Marie District				
Gaudette	rP	14	50	27
4H	rP	6	.5	9
Sault Ste. Marie (city)	rP	7	2	10.4

[a] 1 ft = 0.30 m

[b] 1 acre = 0.40 ha

Leaf and Twig Blight, *Pollaccia radiosa* (Lib.) Bald. & Cif.

This disease continued to cause leaf and twig mortality at numerous locations in the Region. Infection ranged from trace to light and was confined primarily to small-diameter trembling aspen trees. The only exception was observed north of Pancake Bay in Sault Ste. Marie District where a high incidence and moderate level of infection occurred.

Wind Damage

On July 5, 1974 high winds caused extensive damage on Eighteen Mile Island in the southeastern part of the Sudbury District. Damage northwest of the Island was somewhat less. Damage in the form of uprooted trees and top breakage was moderate in Delamere, Cox, Waldie and Laura townships. It was estimated by the Ontario Ministry of Natural Resources that a loss of approximately 2 million bd ft (186,000 sq. m) resulted from the storm.

APPENDIX

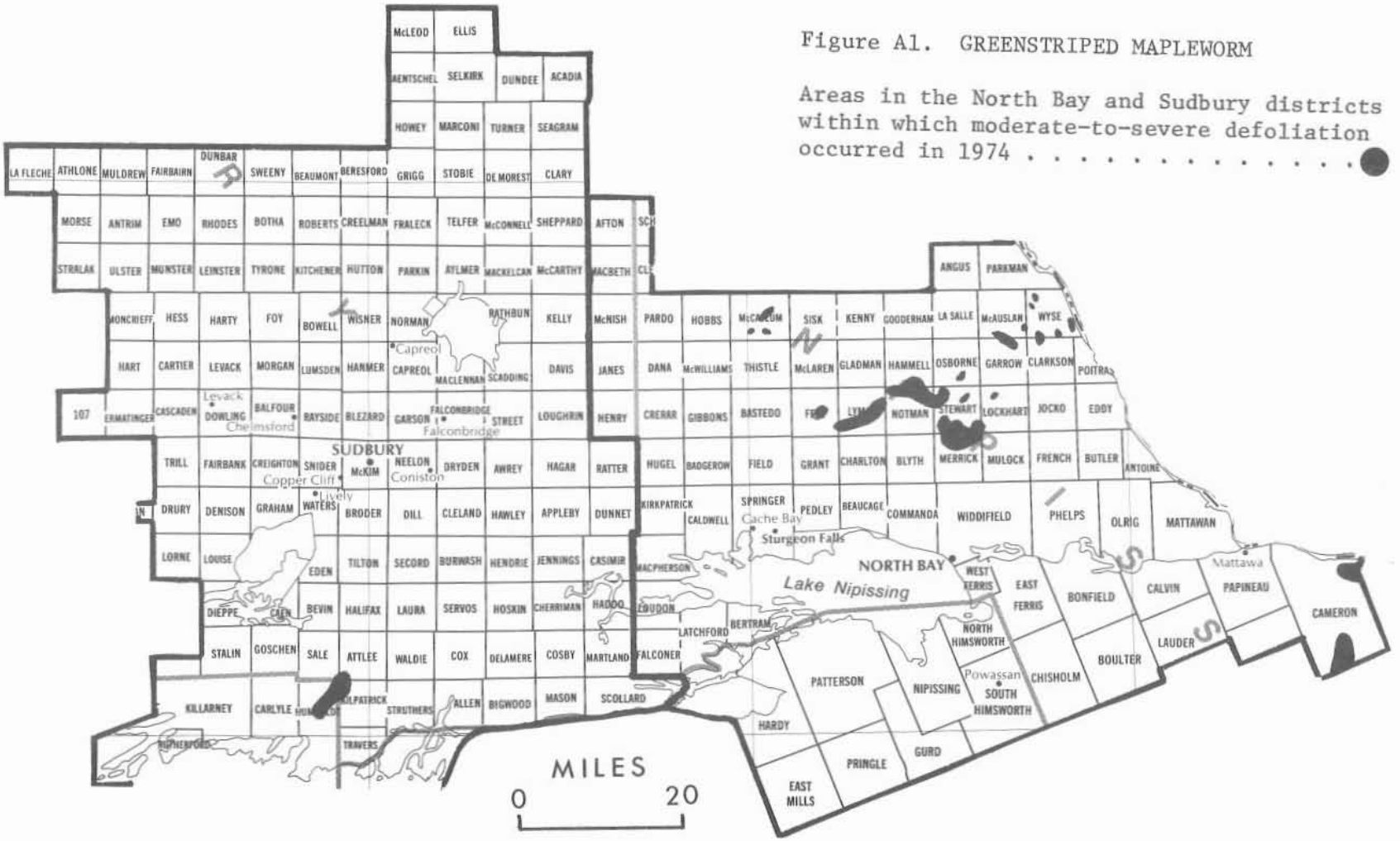


Figure A1. GREENSTRIPED MAPLEWORM

Areas in the North Bay and Sudbury districts within which moderate-to-severe defoliation occurred in 1974 . . . . . ●

NORTHEASTERN REGION

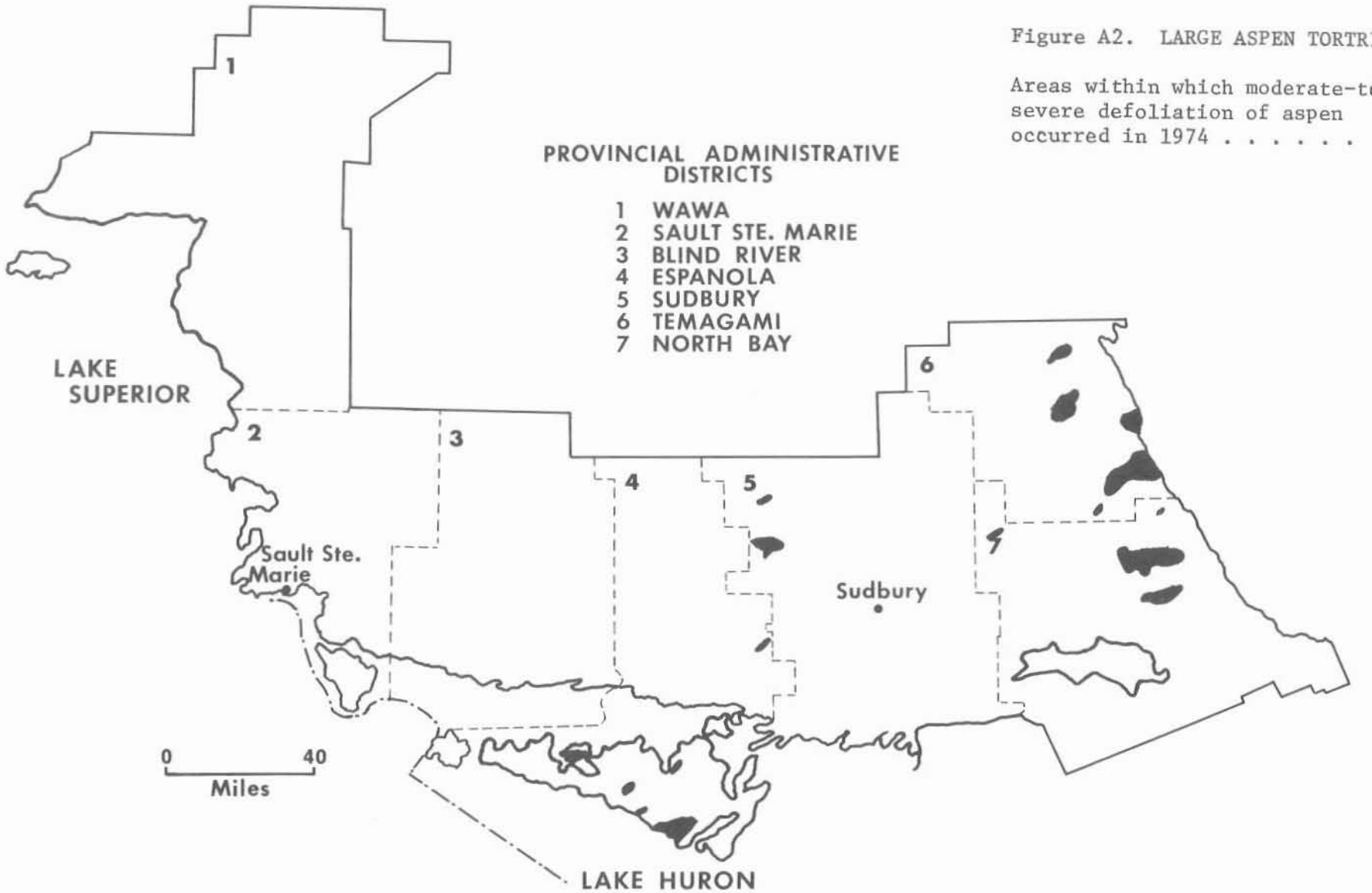


Figure A2. LARGE ASPEN TORTRIX

Areas within which moderate-to-severe defoliation of aspen occurred in 1974 . . . . . ●

Figure A3. BASSWOOD LOOPER

Areas in the Wawa District within which light and severe defoliation occurred in 1974

Light defoliation . . . . . .

Severe defoliation . . . . . .

NORTHEASTERN REGION

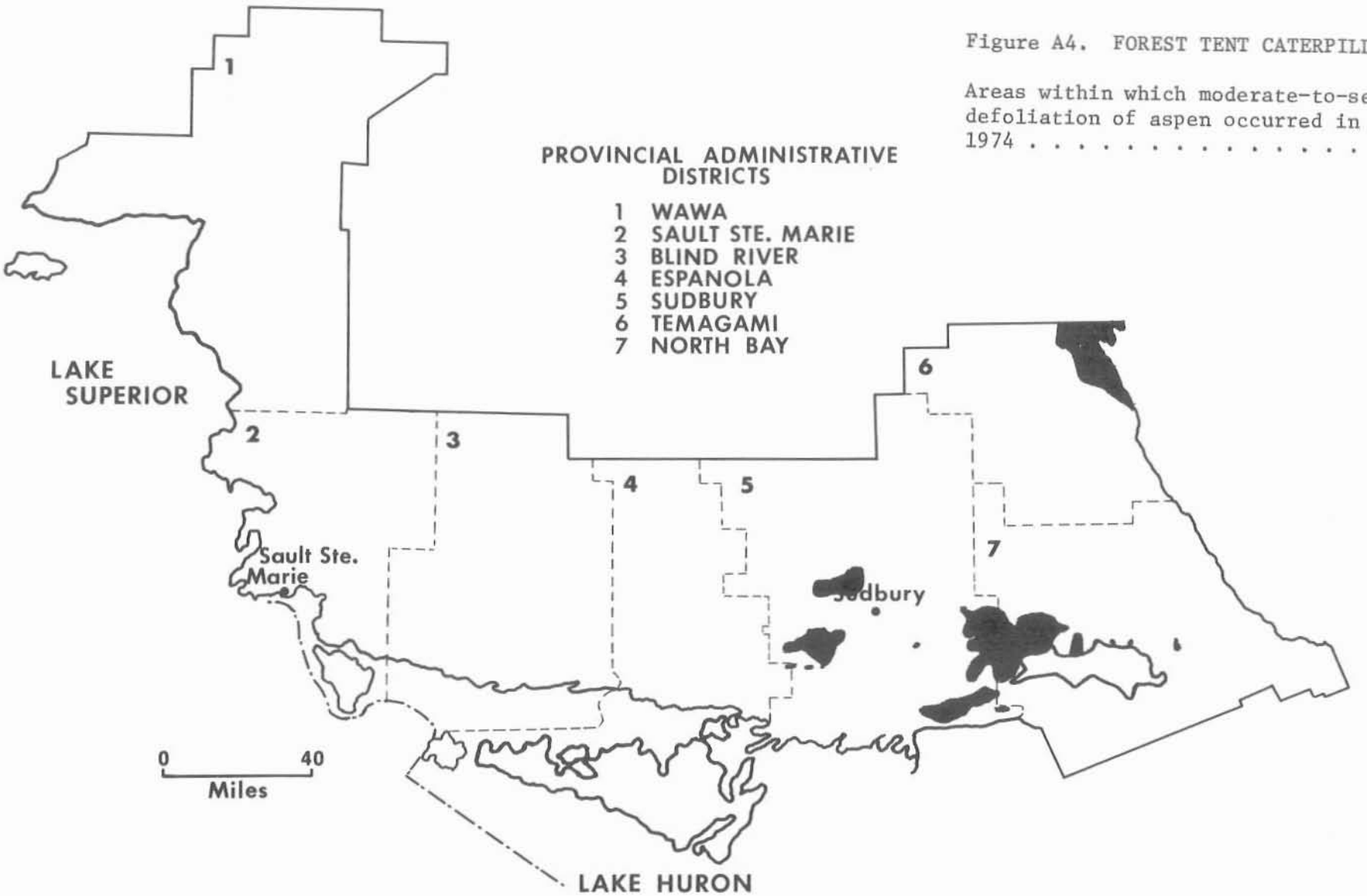


Figure A4. FOREST TENT CATERPILLAR

Areas within which moderate-to-severe defoliation of aspen occurred in 1974 . . . . . ●