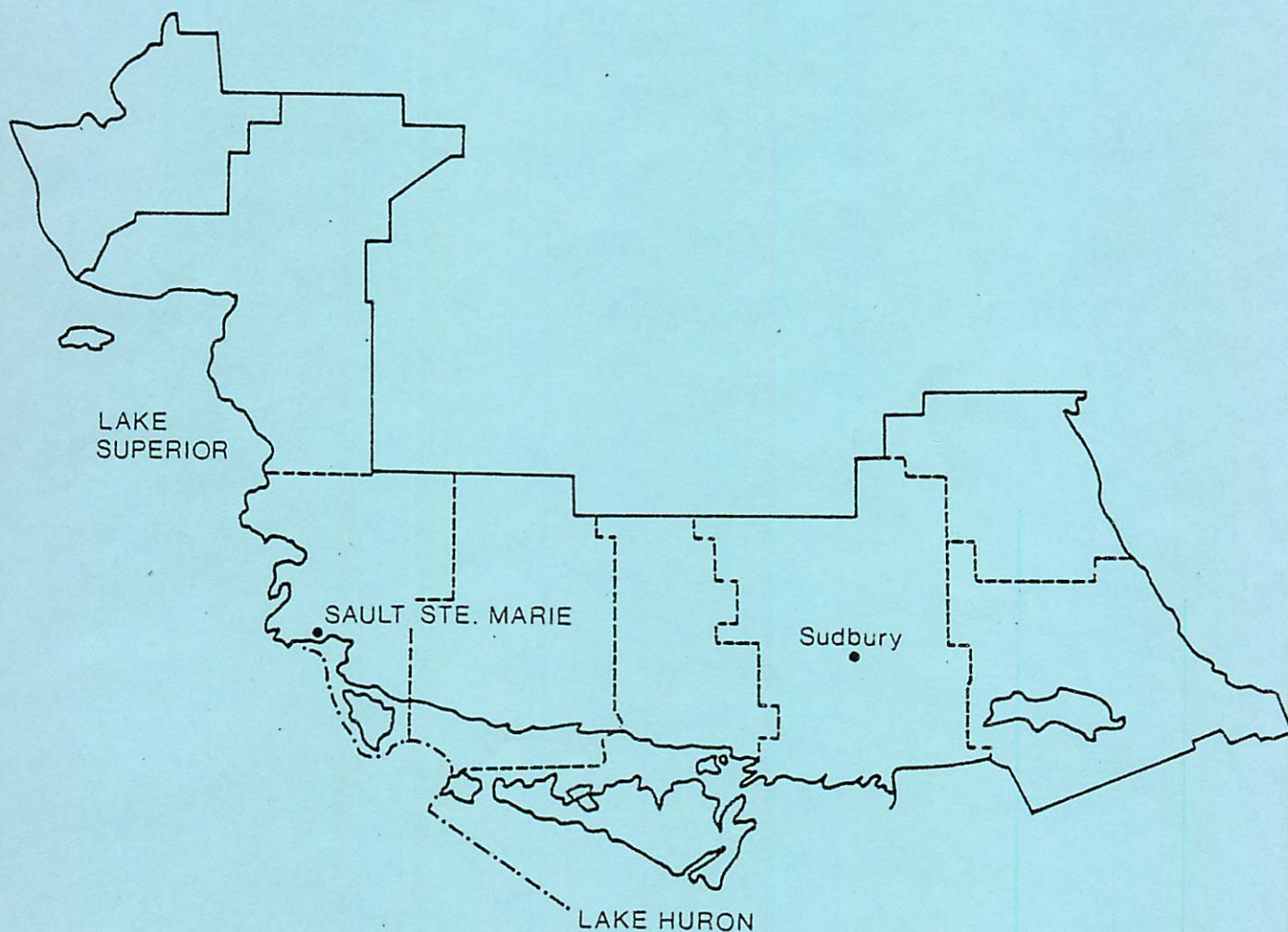


1981

# Results of forest insect and disease surveys in the NORTHEASTERN REGION of Ontario, 1980



CARRIED OUT BY THE GREAT LAKES FOREST  
RESEARCH CENTRE IN CO-OPERATION WITH  
THE ONTARIO MINISTRY OF NATURAL RESOURCES

## SURVEY HIGHLIGHTS

The former White River District, which has been incorporated into the Wawa District, is included in the Northeastern Region report for the first time.

Severe defoliation of spruce and balsam fir by the spruce budworm persisted throughout a large part of the Region. There were major extensions of heavy infestation in Wawa, Sault Ste. Marie and Sudbury districts. Mortality of balsam fir and spruce increased in all areas but was most pronounced in Blind River, Wawa and Sudbury districts. Forest tent caterpillar population levels rose and infestations increased in Sudbury, Espanola and North Bay districts; forecasts indicate expansions in 1981. Likewise, increased populations of balsam fir sawfly, greenstriped mapleworm and birch skeletonizer resulted in heavy damage to balsam fir, maple and birch in localized areas. White pine weevil persisted at a high level and caused severe leader damage in many areas.

A heavy frost in June was responsible for extensive foliar damage to trees of a wide variety of species throughout a large portion of the Region. Forest disease surveys showed lighter infection levels of rusts, tip and shoot blights.

A new feature of this report has forest insects and diseases rated according to their impact (or potential impact) as follows:

- A - of major importance, capable of killing or severely damaging trees or shrubs.
- B - of moderate importance, capable of sporadic or localized injury to trees or shrubs.
- C - of minor importance, not known to present a threat to living trees or shrubs.

Another new feature of this report is that each pest is listed in the Table of Contents according to occurrence in OMNR districts.

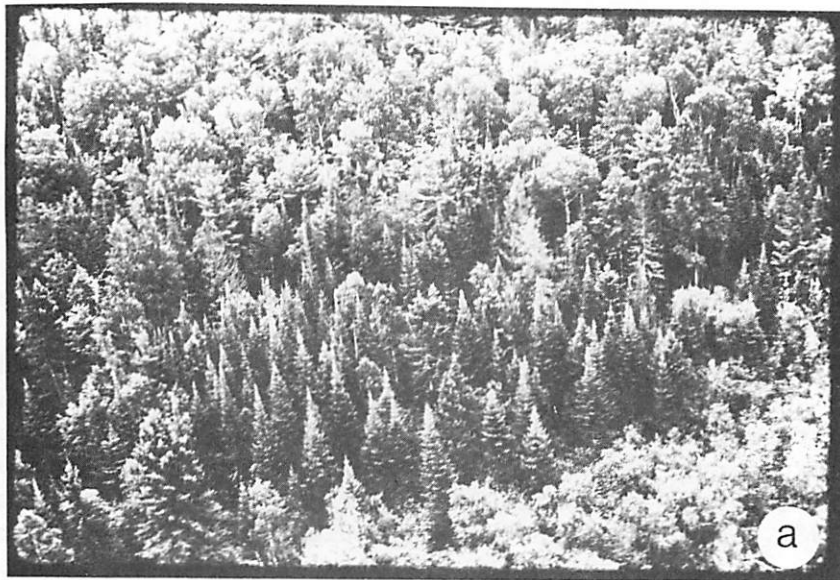
The excellent cooperation and assistance of personnel of the Ontario Ministry of Natural Resources and woods operators are gratefully acknowledged.

K. Hall

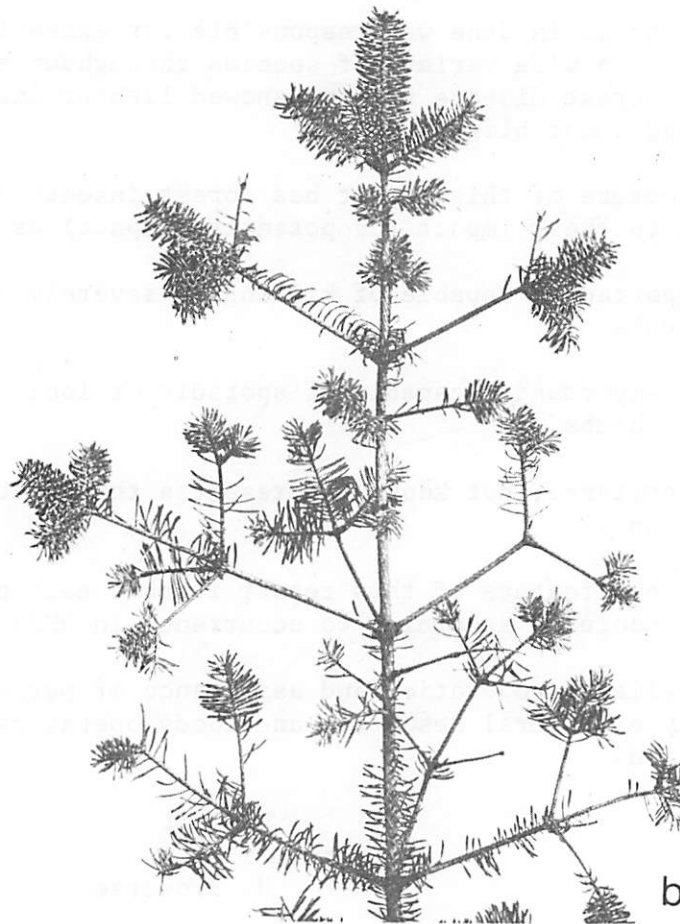
H. Brodersen

W. Biggs

L. MacLeod



a) aerial view of stand



b) defoliated branch

Frontispiece. Balsam fir (*Abies balsamea* [L.] Mill.) damaged by the balsam fir sawfly, *Neodiprion abietis* complex.



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## INSECTS

### Category A

#### Pine Spittlebug, *Aphrophora cribrata* (Say.)

Nearly all Scots pine (*Pinus sylvestris* L.) plantations surveyed in Espanola District hosted trace-to-light populations of spittlebugs. The highest numbers were detected on Manitoulin Island, especially in Victoria and Carnarvon townships. Populations have occurred throughout the island for the past several years; however, only one Scots pine plantation in Dawson Township has suffered twig mortality. Successful results were obtained with Sevin to control high numbers infesting one private Scots pine plantation in Bright Township, Blind River District.

#### Birch Skeletonizer, *Bucculatrix canadensisella* Cham.

A sharp rise in populations resulted in severe browning in approximately 50 ha (123.5 acres) of white birch (*Betula papyrifera* Marsh.) trees along highways 108 and 639 from Serpent River north to Flack Lake and along Highway 17, east of Iron Bridge. Low populations were present north of Iron Bridge along the White River road, and in Kirkwood and Thessalon townships. Very light damage was common elsewhere along the Chapleau highway and the Aubinadong road.

#### Spruce Budworm, *Choristoneura fumiferana* Clem.

The results of damage surveys, population sampling, and egg-mass counts will be included with those of other regions in a special report to be published later this year. This report provides a complete description and analysis of developments in the spruce budworm situation in Ontario in 1980 and gives infestation forecasts for the province for 1981.

#### Greenstriped Mapleworm, *Dryocampa rubicunda rubicunda* Fabr.

A marked increase in the population levels of this defoliator was evident in many areas of Blind River District. New pockets of heavy defoliation were mapped near Iron Bridge in Gladstone Township and near Elliot Lake in Bouck Township. Defoliation of semimature red maple (*Acer rubrum* L.) and sugar maple (*A. saccharum* Marsh.) ranged from 60% to as high as 90% in a total area of about 4 ha (10 acres). Low populations were present, particularly in smaller diameter trees, in the area extending from Thessalon to Elliot Lake.

Birch Leafminer, *Fenusa pusilla* (Lep.)

High populations caused severe defoliation on all ages of white birch across the Region. In the Wawa, Sault Ste. Marie and Blind River districts populations were highest on open grown birches along highways or in open areas. Damage levels were somewhat lower and populations more scattered in the Espanola, Sudbury and North Bay districts. Ornamentals suffered heavy damage in the New Liskeard area of Temagami District.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Three distinct areas of moderate-to-severe defoliation were mapped across the districts of Espanola, Sudbury and North Bay. Two infestations, one centred 9.6 km (6 mi) west of Espanola across Highway 17 and the second in Creighton Township, Sudbury District, doubled in size over their respective boundaries which were mapped in 1979. A third infestation in North Bay District, which had declined to endemic levels last year, expanded to include approximately six townships between Warren and Hagar south of Highway 17 east. The total area of damaged aspen (*Populus* sp.) mapped in 1980 amounted to 121 542 ha (300,208 acres)--a considerable increase over the 45 140 ha (111,495 acres) identified in 1979 (Fig. 1).

The examination of egg bands collected from 40 locations (Table 1) throughout the three districts for the purpose of a 1981 forecast indicated a potential for a twofold increase in the infestation beyond the boundaries mapped in 1980. However, examination of overwintering egg bands for larval hatch revealed that the potential hatch may be reduced by as much as 50% to 99%, indicating that the infestation may not materialize as forecast.

Balsam Fir Sawfly, *Neodiprion abietis* complex

Moderate defoliation caused by this insect occurred in scattered pockets of balsam fir (*Abies balsamea* [L.] Mill.) in Calvin Township and to a lesser degree in Lauder and Papineau townships, North Bay District. Colonies were recovered from a few trees in an area of past infestation in Pedley, Beaucage and Commanda townships on the north shore of Lake Nipissing. Damage in all instances was confined to the upper crowns of infested trees (see Frontispiece).

Redheaded Pine Sawfly, *Neodiprion lecontei* (Fitch)

Population levels of this destructive pest increased sharply in the Blind River and Sault Ste. Marie districts. The heaviest damage was present in two red pine (*Pinus resinosa* Ait.) plantations in Rose Township where high populations completely stripped many trees. Clipping of colonies was carried out; however, both areas will be treated in 1981 for complete control. Lower populations occurred on red pine



# NORTHEASTERN REGION

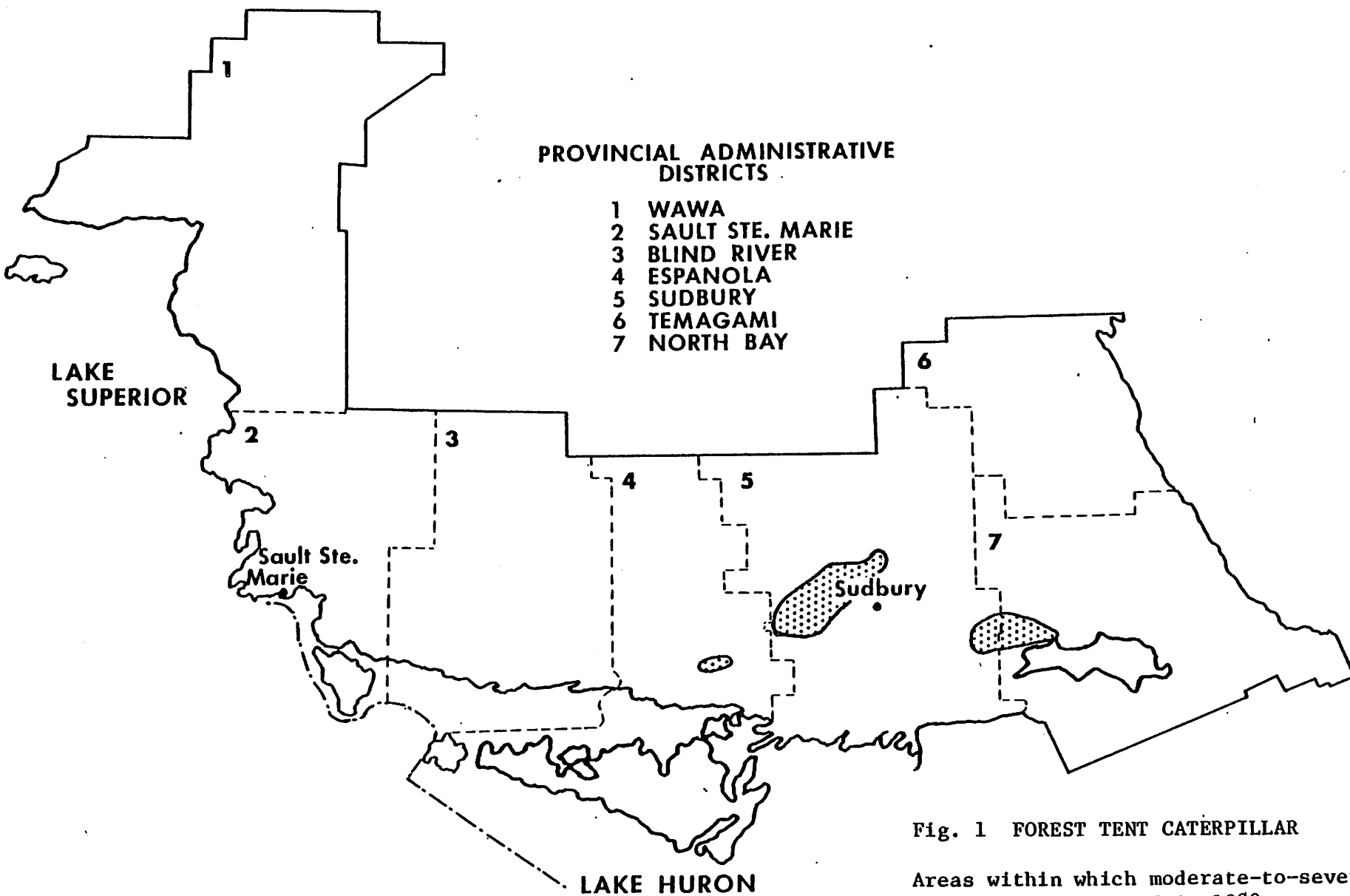


Fig. 1 FOREST TENT CATERPILLAR

Areas within which moderate-to-severe defoliation occurred in 1980



in Proctor, Cobden and Parkinson townships in Blind River District and were destroyed during plantation inspections by OMNR personnel. In the Sault Ste. Marie District low populations occurred for the first time in Curtis Township in one red pine and one jack pine (*P. banksiana* Lamb.) plantation. The majority of colonies were clipped by GLFRC personnel for research purposes. Single colonies were found in several other areas in both districts.

Table 1. Summary of forest tent caterpillar egg-band counts and infestation forecasts for 1980 in the Northeastern Region (counts based on examination of one to three trembling aspen trees per location.

Location (Twp)	Avg DBH (cm) <sup>a</sup>	No. of trees sampled	Avg no. of egg bands per tree	Infestation forecast 1981 <sup>b</sup>
<b>Espanola District</b>				
Hallam	15	1	6	M
Hallam	16	1	10	H
Hyman	15	1	3	M
Indian Reserve #5	15	3	0	Nil
May	15	3	0	Nil
Merritt	15	3	0	Nil
Mongowin	15	3	0	Nil
Nairn	13	1	3	M
Shakespeare	10	1	7	H
Shibananing	15	3	0	Nil
<b>Sudbury District</b>				
Appleby	10	1	9	H
Bleazard	8	1	10	H
Balfour	10	1	20	H
Capreol	10	1	10	H
Cascaden	15	3	0	Nil
Cherriman	15	1	2	L
Dryden	15	1	9	M
Dowling	15	1	15	H
Drury	10	1	9	H
Foy	15	3	0	Nil
Hagar	15	3	0	Nil
Loughrin	15	3	0	Nil
Lorne	13	1	3	M
Morgan	10	1	9	H

(continued)

Table 1. Summary of forest tent caterpillar egg-band counts and infestation forecasts for 1980 in the Northeastern Region (counts based on examination of one to three trembling aspen trees per location (concluded).

Location (Twp)	Avg DBH (cm) <sup>a</sup>	No. of trees sampled	Avg no. of egg bands per tree	Infestation forecast 1981 <sup>b</sup>
Sudbury District (continued)				
Norman	15	3	0	Nil
Ratter	15	3	0	Nil
Waters	18	1	10	H
Indian Reserve #6	15	1	1	L
North Bay District				
Beaucage	15	3	0	Nil
Bonfield	15	3	0	Nil
Caldwell	10	1	9	H
Calvin	15	3	0	Nil
Field	13	1	9	H
Gladman	15	3	0	Nil
Hugel	15	3	0	Nil
Mattawan	15	3	0	Nil
Pealey	15	3	0	Nil
Phelps	15	3	0	Nil
Springer	18	1	16	H
Thistle	15	3	0	Nil

<sup>a</sup> 1 cm = 0.39 in.

<sup>b</sup> L = light, M = moderate, S = severe

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

High populations were present at many locations throughout the city of Sault Ste. Marie on Mugho pine (*Pinus mugho* Turra var. *mughus* Zenari) and Scots pine. Trace-to-light levels persisted in one small Scots pine plantation on the Maki road. In Blind River District the only occurrence of the insect on Scots pine was in a private plantation in Kirkwood Township. On Manitoulin Island, Espanola District, population levels were comparable to those of 1979 except in Gordon Township, where there was an increase (Table 2).

Table 2. Summary of colony counts of European pine sawfly in Scots pine plantations on Manitoulin Island, 1977-1980.

Location (Twp)	No. of trees examined each year	Avg no. of colonies per tree			
		1977	1978	1979	1980
Billings	100	.05	.00	.05	.03
Carnarvon	100	.07	.00	.13	.12
Dawson	100	.01	.00	.01	.00
Gordon	100	.02	.00	.17	.25

Swaine Jack Pine Sawfly, *Neodiprion swainei* Midd.

Two small heavy infestations continued to cause appreciable mortality of jack pine in the Elk Lake Management Unit, Temagami District. One infestation in the Banks-Makobe lakes area in Banks and Wallis townships is about 325 ha (800 acres) in size. It was partly harvested in the winter of 1979-1980; however, shoreline reserves which are heavily infested on Banks and Makobe lakes and along the Makobe River were not cut, and consequently there was potential for spread into adjacent stands. The second infestation, centred around Big Boot Lake in Van Nostrand and Klock townships, is about 450 ha (1,110 acres) in size and is established in an immature jack pine stand. There has been appreciable tree and top mortality in this area, as far south as Red Pine Point on Lady Evelyn Lake. Elsewhere in the Region the insect is found infrequently and at very low levels.

Yellowheaded Spruce Sawfly, *Pikonema alaskensis* (Roh.)

High populations recurred and caused severe defoliation of ornamentals, windbreaks and snowhedges in the northern part of Temagami District. Light damage occurred in many locations in Sudbury and Espanola districts.

White Pine Weevil, *Pissodes strobi* (Peck)

Throughout most of the Northeastern Region levels of leader damage to pines (*Pinus* sp.) varied little from the high levels recorded in 1979. White pine (*Pinus strobus* L.) plantations examined in Patton, Gladstone, Kamichisitit, LeFroy and Parkinson townships, Blind River District, suffered damage ranging from 55% to 80% (Table 3). One of a series of

white pine plantations in Merritt Township, Espanola District, showed the most dramatic increase for that district, as incidence rose 53% over the previous year to 75% of the total trees infested. Throughout the rest of Espanola, Sudbury and North Bay districts levels remained characteristically high, with only slight fluctuations noted from the 1979 levels. Varying degrees of leader mortality were recorded in the Temagami District where jack pine plantations examined showed damage levels ranging from 9% to 14%. Damage levels in the Wawa District, west of White River, remained high as in previous years except in Bryant, Mikano and Magone townships where surveys revealed low weevil populations in spruce plantations.

Table 3. Summary of leader damage to pine plantations in the North-eastern Region, 1979 and 1980.

Location (Twp)	Host	Trees weeviled (%)	
		1979	1980
Blind River District			
Kamichisitit	wP	78	80
Parkinson	wP	67	65
	rP	-	1
Gladstone	wP	64	77
Lefroy	wP	32	79
Patton	wP	31	55
Haughton	jP	7	10
Poulin	jP	-	9
Cobden	rP	-	4
Sault Ste. Marie District			
Curtis	wP	-	9
	jP	3	4
Wawa District			
Bryant	bS	-	1
	wS	-	3
	wS	-	2
Espanola District			
Foster	wP	49	16
Merritt	wP	49	75
Nairn	jP	5	0

(continued)

Table 3. Summary of leader damage to pine plantations in the North-eastern Region, 1979 and 1980 (concluded).

Location (Twp)	Host	Trees weeviled (%)	
		1979	1980
Espanola District (continued)			
Oshell	jP	16	6
Victoria	jP	29	35
Sudbury District			
Burwash	wP	41	40
Delamere	wP	43	35
North Bay District			
McLaren	wP	-	12
Badgerow	wP	23	23
Lauder	wP	18	22
Papineau	wP	3	4
Temagami District			
Firstbrook	jP	14	11
Hartle	jP	18	14

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

The highest populations encountered in 1980 were in Dahl Township, Wawa District, where moderate-to-heavy defoliation of larch (*Larix* sp.) stands occurred. The light-to-moderate infestation in the Garden River Indian Reserve and in St. Joseph Township in the Sault Ste. Marie District declined to very light intensity. The only appreciable numbers surveyed in the Sault Ste. Marie District were found in one small stand in Jocelyn Township, where they caused light damage.

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

Defoliation of mountain ash (*Sorbus americana* [Marsh.]) by this introduced insect varied considerably throughout the Region. In the Wawa District damage was confined to occasional trees and did not exceed the moderate level. Mountain ash in the Sault Ste. Marie and Blind River districts sustained light damage, although occasional trees were severely damaged. Populations in Espanola, Sudbury and North Bay districts declined to the endemic level while in the Temagami District damage levels both in the forest and on ornamentals were high.



Aspen Leafroller, *Pseudexentera oregonana* Wlsh.

Light defoliation of aspen was noted at numerous locations along the Ranger Lake road, Sault Ste. Marie District. Several small pockets of moderate defoliation caused by the feeding of this insect and forest tent caterpillar (*Malacosoma disstria* Hbn.) were detected in the Alban area south of Sudbury and north of the French River on Highway 69 in North Bay District. The infestation which has persisted for several years in the Temagami District declined to endemic levels.

*Category B*

Aspen Twinleaf Tier, *Enargia decolor* Wlk.

Population levels remained unchanged from those of 1979 in the Temagami District. The noctuid was generally found in most aspen stands and contributed substantially to defoliation of the species at many locations.

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

Pockets of light-to-moderate infestation recurred in aspen stands in the northern part of Temagami District and in Curtis Township, Sault Ste. Marie District. New areas of infestation at similar levels were noted in Mongowin Township, Espanola District. Trace-to-light populations occurred at many other locations, particularly along roads or in cutover areas.

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

Population levels increased substantially in the Sault Ste. Marie District and resulted in heavy defoliation in scattered patches of red oak (*Quercus rubra* L.) at Pointe Aux Pins, Hiawatha Park and in Jocelyn Township on St. Joseph Island. Heavy damage occurred at Maple Ridge in Thessalon Township; however, this damage resulted from the combined effects of oak leaf shredder and elm spanworm (*Ennomos subsignarius* Hbn.). Aerial observations revealed small pockets of oak leaf shredder damage in McMahan, Otway, Jackson, Nicholas and Day-Bright townships in Blind River District. In Sault Ste. Marie and Blind River districts approximately 80 ha (200 acres) were affected. Although occasional trees sustained moderate-to-severe damage, the general damage on Manitoulin Island remained at a low level.

Eastern Pineshoot Borer, *Eucosma gloriola* Heinr.

For the third consecutive year appreciable numbers of shoots and leaders damaged by this insect were observed in red pine and jack pine plantations in Barr and Firstbrook townships in the northern part

of Temagami District. Leader mortality was recorded at 18% and 14%, respectively. Elsewhere in the District, red pine, white pine and jack pine regeneration supported varying degrees of infestation. Low populations persisted in the red pine plantation north of Iron Bridge, Blind River District. Damaged laterals ranged from two to six per tree.

Fall Webworm, *Hyphantria cunea* Dru.

The light-to-moderate infestation which has persisted for several years in Beaucage Park, North Bay District on black ash (*Fraxinus nigra* Marsh.) continued at a comparable level. In addition, small numbers of colonies were present in the adjacent townships of Commanda and Pedley. Elsewhere in the Region populations remained at the trace level.

Aspen Leafblotch Miner, *Lithocolletis ontario* Free.

In the western part of Wawa District damage levels on trembling aspen (*Populus tremuloides* Michx.) remained the same as in previous years with only a few locations hosting moderate-to-high populations. Leafmining in the Temagami District was confined to small aspen trees and occurred infrequently. Elsewhere in the Region populations declined to endemic levels.

Redheaded Jack Pine Sawfly, *Neodiprion virginianus* complex

High populations were present in jack pine plantations at several locations in Barr Township, where they caused heavy defoliation, particularly on small trees. Light defoliation was common throughout Firstbrook Township and there was light damage at many other locations in Temagami District.

Category C

Red Pine Cone Beetle, *Conophthorus resinosae* Hopk.

Populations of this insect remained high at some locations in Temagami District. Mature and overmature red pine stands were once again heavily infested through the northern part of the district. The ground under red pine trees was littered with fallen twigs containing adult beetles. Damage was particularly heavy on islands and shoreline reserves on Lake Temagami.

Table 4. Other forest insects.

Insect	Host(s)	Remarks	Rating
<i>Acrobasis betulella</i> Hlst. Birch tubemaker	wB	light-to-moderate numbers general in Temagami Dis- trict	C
<i>Archips argyrospilus</i> (Wlk.) Fruit tree leafroller	deciduous	light numbers widely dis- tributed in Temagami District	C
<i>Archips cerasivoranus</i> (Fitch) Uglynest caterpillar	ecCh	high populations in Thessalon, Kirkwood, Rose, LeFroy, Houghton and Galbraith twp, Blind River District; light-to-moderate populations in North Bay District	B
<i>Archips mortuanus</i> Kft. Poplar and willow leafroller	sweetgale	heavy infestations along lakeshores, Burnaby Twp, Temagami District	C
<i>Archips negundana</i> Dyar. Larger boxelder leafroller	mM	increased populations in city of Sault Ste. Marie; light-to-moderate defolia- tion	B
<i>Argyresthia oreasella</i> Clem. Cherry shoot borer	pCh	high numbers along Ely road, C Blind River District	C
<i>Cecidomyia reeksi</i> Vock. Jack pine resin midge	jP	common in low numbers in Espanola and Sudbury districts	C
<i>Cenopsis acerivorana</i> Mack. Maple leafroller	rM, sM	high populations along Shultz road, 4th Line and Hiawatha Park, Sault Ste. Marie District	C
<i>Cenopsis petitana</i> Rob. Basswood leafroller	Ba	low levels at scattered locations in Espanola and North Bay districts	C
<i>Cephalcia</i> sp.	rP	small numbers in Gurd and S. Himsforth twp, North Bay District and Long Twp, Blind River District	C

(continued)

Table 4. Other forest insects (continued).

Insect	Host(s)	Remarks	Rating
<i>Choristoneura conflictana</i> Wlk. Large aspen tortrix	tA	small pocket of moderate defoliation in Gordon Twp, Espanola District	B
<i>Chrysomela mainensis mainensis</i> Bech. Alder leaf beetle	A	second consecutive year of high populations in Strathy and Strathcona twp, Temagami District	C
<i>Coleophora laricella</i> Hbn. Larch casebearer	tL	decline to endemic levels at Garden River Indian Reserve and on St. Joseph Island, Sault Ste. Marie District; small numbers in Espanola, Sudbury and North Bay districts	B
<i>Conophthorus banksianae</i> McPherson Jack pine tip beetle	jP	high populations in plantations in Temagami District; light populations in Wawa District; small numbers in Espanola and Sudbury districts	C
<i>Dioryctria reniculelloides</i> Mut. & Mun. Spruce coneworm	wS	light numbers in association with spruce budworm in Kirkwood Twp, Blind River District; populations at many locations in Region	C
<i>Ennomus subsignarius</i> Hbn. Elm spanworm	rO, M	second consecutive year of high populations at Hagans Hill, Thessalon Twp, Blind River District	C
<i>Halisidota maculata</i> Harr. Spotted tussock moth	wB, W, Al	light-to-moderate numbers in Villeneuve Twp, Blind River District	C
<i>Monochamus scutellatus</i> (Say) White spotted sawyer beetle	jP, wS, bF	very high numbers on skidways in Tiernan Twp; light populations on jack pine pulp piles elsewhere in Wawa District	B
<i>Neodiprion nanulus nanulus</i> Schedl Red pine sawfly	jP	scattered colonies around Lake Temagami	B

(continued)

Table 4. Other forest insects (concluded).

Insect	Host(s)	Remarks	Rating
<i>Neurotoma inconspicua</i> (Nort.) Plum web-spinning sawfly	pCh	heavy defoliation of many trees at one location in Patton Twp, Blind River District	C
<i>Phratora purpurea purpurea</i> Brown Aspen leaf beetle	tA	small trees heavily defoliated in open areas in Temagami District	C
<i>Pseudexentera cressoniana</i> Clem. Oak leafroller	rO	light populations in Mongowin Twp, Espanola District	C
<i>Rheumaptera hastata</i> Linn. Black looper	wB	heavy damage at scattered locations in Wawa District	C

## TREE DISEASES

### *Category A*

#### Needle Rust of Spruce, *Chrysomyxa ledicola* Lagh.

A high incidence of this rust has persisted along the Dubreuilville road for the past several years. Foliar damage reached a peak in 1978 when low-to-medium levels were present in the majority of black spruce stands. A gradual decline in the level of damage present began in 1979 and reached a low in 1980. In Pine Township, Sault Ste. Marie District, the high incidence and level of foliar damage persisted on small hosts but on larger hosts was confined to the lower branches.

#### Ink Spot of Poplar, *Ciborinia whetzeli* (Seaver) Seaver

The incidence of infection was substantially lower in the Blind River District than in previous years. Damage was found at trace levels at all sample points except in Cobden Township where heavy damage was recorded (Table 5). For the third consecutive year trace-to-low damage levels were found at many locations in Espanola, Sudbury and North Bay districts. Small pockets of aspen trees in the central portions of Askin and Riddell townships, Temagami District, suffered light defoliation.

#### Scleroderris Canker, *Gremmeniella abietina* (Lagerb.) Morelet

A high level of incidence of this disease was recorded in two jack pine plantations, one in Lendrum Township, Wawa District and one in Gaudette Township, Sault Ste. Marie District. Although 100% and 99%, respectively, of the trees were affected there was no mortality. Moreover, mortality is not anticipated as the trees are of sufficient height (>2 m) (>6.56 ft) to withstand infection. Low damage levels were recorded in Kirkwood, Parkinson and Wells townships, Blind River District and in Phelps and Boulter townships, North Bay District.

#### Rhizina Root Rot, *Rhizina undulata* (Schaff.)

Special surveys have been carried out in the past several years in areas of recent burn to determine the distribution and abundance of this organism which fruits in late summer and is capable of killing juvenile seedlings up to 5 years old. No evidence of the disease was found in burned areas along the Ranger Lake or Dubreuilville roads in past years; however, in 1980 fruiting was abundant in Esquega Township, Wawa District. The affected area at the junction of Highway 101 and Hawk Junction road was burned in the spring of 1980; previously it contained primarily black spruce and balsam fir.



Table 5. Defoliation caused by ink spot of poplar in the Northeastern Region in 1980.

Location (Twp)	Avg ht of trees (m) <sup>a</sup>	Area affected (ha) <sup>b</sup>	Trees affected (%)	Defoliation (%)
<b>Blind River District</b>				
Cobden	9	<1	20	85
Jocelyn	4	<1	20	85
Patton	13	<1	15	5
Proctor	2	<1	5	5
<b>Espanola District</b>				
Baldwin	2.5	<1	100	10
Foster	5	1	100	<1
Robinson	7	4	0	0
<b>North Bay District</b>				
Butler	9	1.6	0	0
Crerar	9	2.5	20	<1
Pardo	4	8	85	4
Phelps	10	1.6	0	0
Thistle	10	1	100	<1
<b>Sudbury District</b>				
Hagar	8.5	2.5	10	<1
Morgan	9	8	0	0
Waldie	5	4	100	13
<b>Temagami District</b>				
Askin	15	<1	75	10
Riddell	16	<1	75	10

<sup>a</sup> 1 m = 3.28 ft

<sup>b</sup> 1 ha = 2.47 acres

Needle Cast, *Davisomycella ampla* (Davis) Darker

This needle cast was common throughout Blind River District and parts of Sault Ste. Marie District, generally at trace-to-light levels of foliar damage. One exception occurred in immature jack pine plantations in Rose Township where foliar damage was evaluated at 27%. One semimature stand in Gaudette Township, Sault Ste. Marie District, showed 15% of the foliage infected. Trace levels of needle cast were observed in Espanola, Sudbury and North Bay districts.

Category B

Maple Anthracnose, *Kabatiella apocrypta* (Ell. & Ev.)

For the second consecutive year this condition was present in sugar maple stands along the Sylvan Valley road in Sault Ste. Marie District. Foliar damage levels ranged from light to the occasional severe pocket. Over all, however, the frequency and intensity of infection were lower than in 1979.

Needle Cast, *Lophodermium* sp.

Three small infection centres of this disease were found in Blind River District. In Proctor and Patton townships a high percentage of the planted red pine trees showed trace-to-light foliar damage. Along the Shaw Road, particularly in Haughton Township, immature jack pine trees were lightly infected.

A Needle Rust of Willow, *Melampsora epitea* Thum.

In 1979 a high incidence and level of foliar damage occurred in Gaudry Township, Sault Ste. Marie District and in Dumas and Noganash townships, Wawa District. In addition, lighter infection levels were present at many locations in the two districts. In 1980, the disease was common at the trace level in Gladstone Township, Blind River District and in Rabazo Township, Wawa District.

*Micropera* Lev.

This organism was present on single, occasional trees throughout the Kirkwood Management Unit in Blind River District. Although incidence levels were low in all instances, infection levels were high. The disease frequently affected single trees while adjacent white pine trees remained free of infection.

A Needle Cast of Pine, *Naemacyclus minor* Butin

The only occurrence of this disease in the Region was noted in a private plantation in Bright Township, Blind River District. The affected area, approximately 10 ha (24.7 acres) in size, contains Scots pine Christmas trees averaging 1.3 m (4.3 ft) in height. Evaluation showed an incidence of 93% and a foliar damage level of 32%.

Shoot Tip Blight, *Pollaccia radiosa* (Lib.) Bald. & Cif.

Heavy infection centres were present in three areas in the Region. In Parkinson Township, Blind River District, high levels of tip blight occurred in one area of young aspen, with varying degrees of intensity recorded in the remainder of a large salvage area. Regeneration in Curtis Township, Sault Ste. Marie District and in Salter Township, Espanola District, suffered heavy tip blight. Trace damage levels were observed at many other locations. A high incidence and level of damage of *Pollaccia elegans* Servazzi, a similar shoot tip blight, was recorded on balsam poplar (*Populus balsamifera* L.) in Cobden Township and largetooth aspen (*P. grandidentata* Michx.) in Parkinson Township, both in Blind River District.

Leaf Spot, *Septoria* Sacc.

Moderate-to-heavy discoloration of leaves of white birch and yellow birch (*Betula alleghaniensis* Britton) caused by leaf spot occurred along Highway 17 north in Wawa District, from the Sand River to just north of the Mijin road. Foliar damage was most pronounced on immature trees; however, in certain instances mature trees were also infected. *Septoria musiva* Pk., a leaf spot of poplar, occurred commonly on balsam poplar in Plummer Township, Sault Ste. Marie District.

Red Pine Shoot Blight, *Sirococcus strobilinus* Preuss

This disease has persisted on red pine in Agawa and Batchawana Provincial Parks for the past 8 years. During this period the incidence level has been high and the damage level trace. In 1980 foliar damage levels increased to light, particularly on small hosts. Damage levels on larger trees remained comparable to 1979 levels.

Table 5. Other tree diseases.

Organism	Host(s)	Remarks	Rating
<i>Armillaria mellea</i> (Vahl ex Fr.) Kumm. Armillaria root rot	jP, rP, scP	trace levels in most plantations in Region	A
<i>Ceratocystis ulmi</i> (Buism.) C. Moreau Dutch elm disease	E	on small-diameter trees along Turkey L. road, Sault Ste. Marie District	A
<i>Chrysomyxa arctostaphyli</i> Diet. Yellow witches' broom	wP	trace levels at many loca- tions along Highway 17 north of Sault Ste. Marie	B
<i>Coleosporium asterum</i> (Diet.) Syd. Needle rust	jP	common in plantations along Black Creek road; low incidence elsewhere in Blind River District	B
<i>Cronartium ribicola</i> (J.C. Fisch.) White pine blister rust	wP	trace levels wherever host present	A
<i>Endocronartium harknessii</i> (J.P. Moore) Y. Hirat. Western gall rust	jP	trace levels common in immature stands	B
<i>Scolecnectria cucurbitula</i> (Tode ex Fr.) Booth Canker and dieback	jP	trace levels on regenera- tion in Haughton Twp, Blind River District	C
Abiotic, storm damage	all species	severe damage from LeRoche east through Temagami, and north to Quebec border	D

## *Abiotic Damage*

### Frost Damage

Frosts during the second week of June caused considerable, widespread damage across most of the Northeastern Region. Severe damage to various hardwoods was mapped in the northern half of Sault Ste. Marie District and the southern part of Wawa District. Mature maple (*Acer* spp.) and birch (*Betula* spp.), especially those on hilltops, suffered severe foliar damage. Along the Ranger Lake road and in Lake Superior Provincial Park all new black ash (*Fraxinus nigra* Marsh.) foliage was killed. Balsam fir in these areas suffered foliage losses of 40% to 60% on large hosts. White spruce, depending on size and location, showed damage levels of 10% to 25%. Evaluations carried out in spruce and fir regeneration showed damage levels ranging as high as 70%. Moderate-to-heavy damage to aspen and balsam poplar stands was mapped in the northern part of Blind River District and at numerous locations in Espanola, Sudbury and North Bay districts. Frost damage was most evident in young white spruce plantations as nearly all areas examined showed 100% incidence at moderate damage levels. Aspen, red maple and spruce-fir stands all suffered moderate-to-severe frost damage throughout the northern part of Temagami District where the cold weather was most severe.

## *Special Surveys*

### Black Spruce Plantation Survey

During 1980 a series of black spruce plantation surveys was conducted in the Northern, North Central, and Northwestern regions. Stands were selected on the basis of height and inspections were carried out in June and July. One of the selected plantations, which was located in Bryant Township, Wawa District, suffered 10% damage as a result of frost; spruce budworm were present on all trees and resulting defoliation averaged 8%; leader damage caused by white pine weevil (*Pissodes strobi* [Peck]) occurred on 10% of the trees. Trace levels of spruce coneworm (*Dioryctria reniculelloides* Mand M.) and spruce gall aphid (*Adelges lariciatus* Patch) were also present. The only pathogen present was a needle rust (*Chrysomyxa ledicola* [Pk.] Lagh.) which was found at trace levels on 11% of the trees.

### White Pine Plantation Survey

Surveys were conducted during the summer of 1980 in randomly selected white pine plantations throughout the Northeastern Region to determine the status of insect infestation and disease frequency.

Stands were selected on the basis of height and were examined for the insects and diseases described (Table 6).

All areas had low or endemic pest levels. Exceptions were: several townships (Table 6) where trees had weevil damage ranging as high as 53%, and in Foster Township, Espanola District where white pine blister rust stem cankers were present on 11% of the trees examined.