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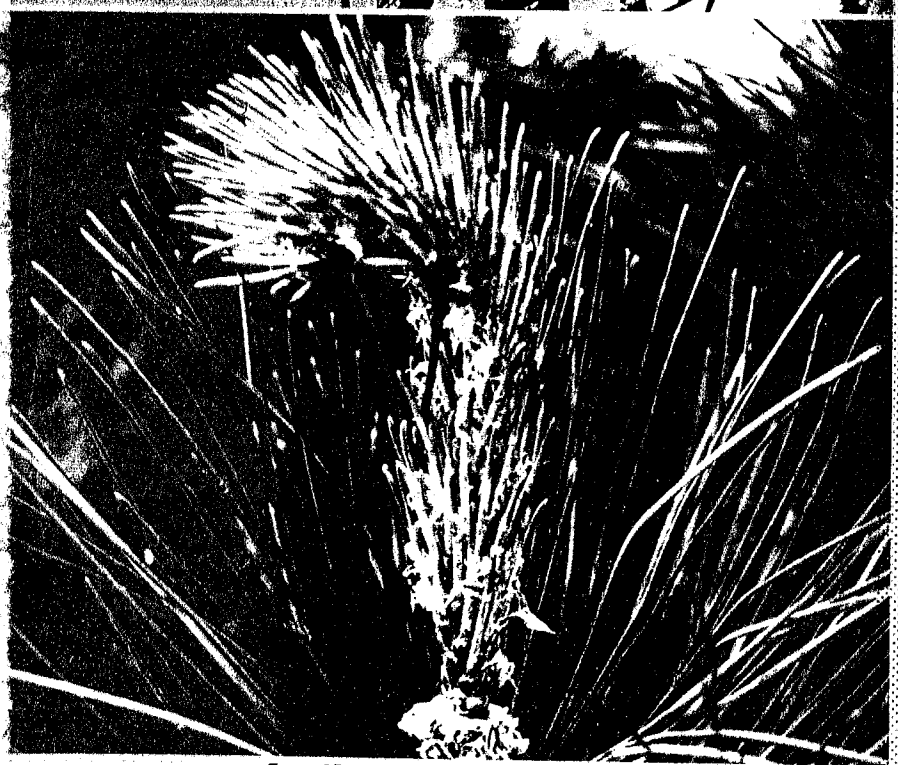

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FOREST PEST CONDITIONS IN THE MARITIMES IN 1979 WITH AN OUTLOOK FOR 1980

by

L. P. MAGASI

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MARITIMES FOREST RESEARCH CENTRE

The Maritimes Forest Research Centre (MFRC) is one of six regional establishments of the Canadian Forestry Service, within Environment Canada. The Centre conducts a program of work directed toward the solution of major forestry problems and the development of more effective forest management techniques for use in the Maritime Provinces.

The program consists of two major elements - research and development, and technical and information services. Most research and development work is undertaken in direct response to the needs of forest management agencies, with the aim of improving the protection, growth, and value of the region's forest resource for a variety of consumptive and non-consumptive uses; studies are often carried out jointly with provincial governments and industry. The Centre's technical and information services are designed to bring research results to the attention of potential users, to demonstrate new and improved forest managment techniques, to assist management agencies in solving day-to-day problems, and to keep the public fully informed on the work of the Maritimes Forest Research Centre.

FOREST PEST CONDITIONS IN THE MARITIMES IN 1979 WITH AN OUTLOOK FOR 1980

by

Laszlo P. Magasi

Maritimes Forest Research Centre

Fredericton, New Brunswick

Information Report M-X-106

Canadian Forestry Service

Environment Canada

1980

This report is dedicated to the

MEMORY

of

Walter Harrington

(1922 - 1979)

by the members of the

Forest Insect and Disease Survey

Maritimes Region

who lost a good friend and a respected colleague

TABLE OF CONTENTS

ABSTRACT

This report reviews the status of forest insects and tree diseases in the Maritimes Region in 1979 and gives, for some pests, a forecast of conditions for 1980. Eight economically important forest insects of conifers and nine of hardwoods, four tree diseases, abiotic injuries, and deterioration of birch are discussed in detail; others are listed in tabular form. More detailed information is available on request from the Maritimes Forest Research Centre.

RESUME

Ce rapport passe en revue l'impact qu'ont en les insectes et les maladies des arbres dans la région des Maritimes en 1979 et offre, pour certains de les organismes nuisibles, un aperçu des conditions prévues pour 1980. L'auteur traite en particulier de huit insectes de conifères d'importance économique et neuf de feuillus et de quatre maladies des arbres; il y a également question de dégâts abiotiques et du phénomène de détérioration du bouleau. Les autres organismes sont énumérés sous forme tabulaire. De plus amples renseignements sont disponibles sur demande au Centre de recherches forestières des Maritimes.

ACKNOWLEDGEMENTS

This report is the result of a combined effort of all members of the Forest Insect and Disease Survey: C.L. Burlock, L.J. Coady, C.M. Dobson, D.E. Elgee, K.J. Harrison, A.M. Jones, C.D. MacCall, L.P. Magasi, O.A. Meikle, W.R. Newell, D.P. Ostaff, S.E. Pond and F.A. Titus. We wish to thank Mr. P. Boynton and C.M. Pitt, members of the group for most of the field season, our students and the numerous staff members who helped us in many ways.

Information contributed by the Pest Detection Officers of the New Brunswick Department of Natural Resources, the Nova Scotia Lands and Forest and the Prince Edward Island Department of Agriculture and Forestry is acknowledged along with information and manpower provided by Forest Protection Limited, J.D. Irving Ltd., Nova Scotia Forest Industries, and others.

We wish happy retirement to Mrs. Kay McKnight who looked after us for many years.

INTRODUCTION

One of the objectives of the Forest Insect and Disease Survey is to monitor insect and disease conditions, determine their effect on the forest and report on the status of the important and most common pests. In the Maritimes, this information is published in Seasonal Highlights, Special Reports on pests of particular interest, Information Reports, and in the Annual Report of the Forest Insect and Disease Survey.

This report outlines forest pest conditions in 1979 with an outlook on conditions expected in 1980. It aims to provide forest managers with information on pest conditions early enough to be considered in management decisions before the start of the 1980 field season. Insects and diseases that were widespread and caused considerable concern in 1979 are discussed in detail; others of localized or of lesser importance are presented in tabular form. More information on specific conditions will be provided, upon request from the Martimes Forest Research Centre.

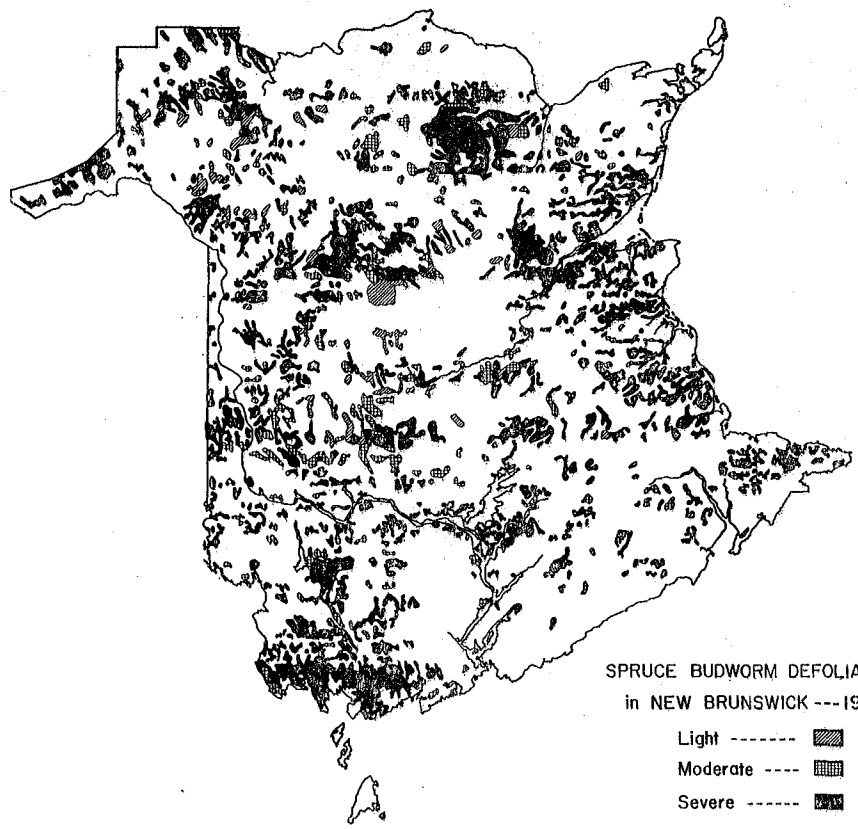
IMPORTANT FOREST PESTS

Spruce Budworm, *Choristoneura fumiferana* (Clem.)--Defoliation and forecast information was collected by various organizations. The following is a summary of their reports.

In New Brunswick, defoliation of balsam fir and spruce stands occurred on 1.4 million ha. Of this, defoliation was severe on almost 1.1 million ha, moderate on 235 000 ha and light on 105 000 ha. Severe defoliation occurred throughout the Province (Fig. 1.). Although the largest continuous areas were in southern Charlotte, eastern Carleton, eastern Northumberland counties and at the junction of Restigouche-Northumberland -Gloucester counties, the many "patches" elsewhere were often separated only by non-susceptible forests or non-forested areas. The total area of defoliation increased by 615 000 ha from the 810 000 ha defoliated in 1978. Egg-mass surveys indicate a decrease in spruce budworm populations, in both the area affected and in the level of infestation for 1980 in all areas of the Province except parts of Restigouche, Northumberland, and Kent counties. The area of susceptible forests in the moderate or high hazard categories decreased slightly to 3.1 million ha.

On mainland Nova Scotia, defoliation was severe on 102 000 ha, moderate on 38 000 ha, and light on 59 000 ha. The total area of defoliation is about 74 000 ha more than in 1978. Most of the severe or moderate defoliation, 95 000 ha, occurred in Cumberland and Colchester counties, and other defoliated areas of various sizes in Antigonish, Pictou and Guysborough counties totalled 25 000 ha. In the Annapolis Valley, the 21 000 ha of moderate and severe defoliation along with the 21 000 ha of light defoliation was largely the result of a massive moth flight into the area in 1978. Egg-mass surveys indicate moderate or severe defoliation in many areas of Cumberland, Pictou, Kings, and Annapolis counties and in some patches in Colchester and Antigonish counties in 1980.

On Cape Breton Island, almost 890 000 ha of forests were defoliated to some extent. Defoliation was severe on 257 000 ha, moderate on 130 000 ha, and light on 164 000 ha. Another 339 000 ha were classified as "variable" (a


SPRUCE BUDWORM DEFOLIATION
in NEW BRUNSWICK --- 1979
Light -------
Moderate ----
Severe ------

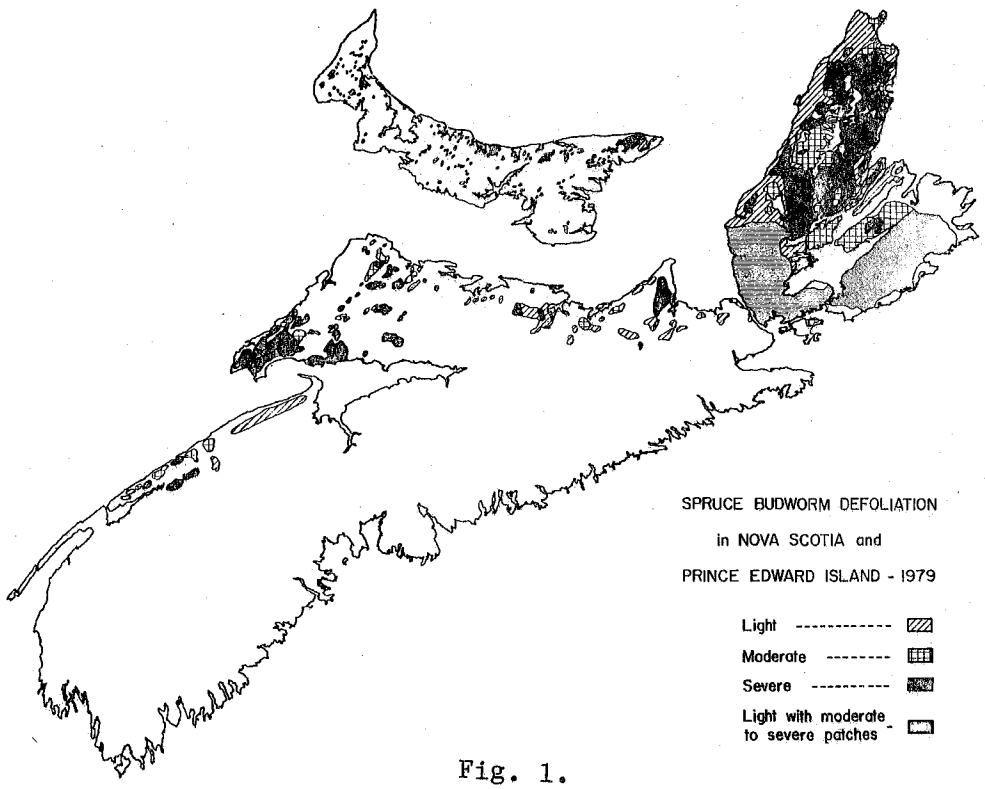

SPRUCE BUDWORM DEFOLIATION
in NOVA SCOTIA and
PRINCE EDWARD ISLAND - 1979
Light ----------
Moderate --------
Severe ----------
Light with moderate to severe patches

Fig. 1.

Table 1. Level of spruce budworm parasitism in the Maritime Provinces

	Percent larval and pupal parasitism			
	1976	1977	1978	1979
Sprayed - New Brunswick	13.9	16.1	12.7	15.7
Unsprayed - New Brunswick	12.1	10.1	10.4	10.8
Unsprayed - Nova Scotia and Prince Edward Island	10.3	12.6	16.5	16.5

mixture of light-moderate-severe defoliation). The area of severe defoliation was less than the 376 000 ha in 1978 but the area of variable defoliation increased from 203 000 ha in 1978 to 339 000 ha in 1979. Most of the severe defoliation occurred in Inverness and Victoria counties. Egg-mass surveys indicate severe defoliation of most of the softwood forests of Cape Breton Island in 1980. The death of a further 9.7% of the merchantable balsam fir on the Highlands since 1978 brought total mortality to 36%. Another 5% is expected to die in 1980. Corresponding mortality figures for the Lowlands are 4.7% current, 14.1% total, and about 6% predicted.

In Prince Edward Island, all levels of defoliation were greatly reduced from 1978 in all areas of the Province, largely the result of excellent tree growing conditions and poor larval survival. Defoliation was severe on 7200 ha, moderate on 4500 ha and light on 3100 ha. Corresponding figures in 1978 were 34 400 ha, 10 800 ha and 4000 ha, respectively. Egg-mass surveys indicate a significant reduction in budworm populations for much of Prince and Queens counties and a marginal reduction in Kings County in 1980. Isolated areas of severe defoliation should still occur in most of the Province.

The levels of spruce budworm parasitism were monitored for the fourth consecutive year at more than 20 locations in the Region. Results (Table 1) showed no significant variation from year to year and no significant differences between sprayed and unsprayed areas or between unsprayed areas in different provinces.

Spruce Beetle, *Dendroctonus rufipennis* (Kirby)--Populations of this insect have been increasing at an alarming rate in Nova Scotia since the mid-1970's as a result of widespread blowdown in the eastern and central parts of the Province in 1974 and as a result of the increasing numbers of spruce budworm-weakened stands, especially on Cape Breton Island. Infestations are killing patches of trees throughout the Province, mostly in white spruce stands.

A preliminary survey to establish the distribution (Fig. 2) and host preference of the insect was

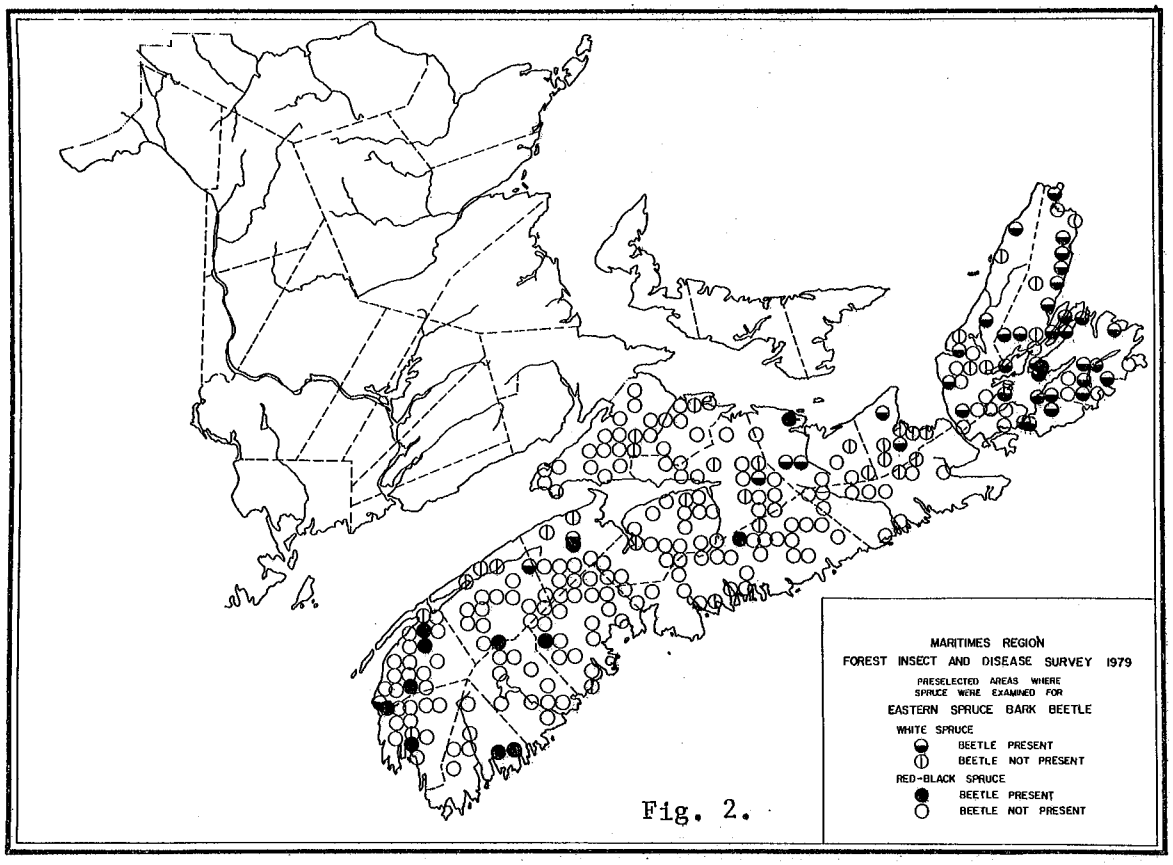


Fig. 2.

conducted at more than 300 preselected locations, in stands with trees >18 cm dbh, chosen and distributed on the basis of the Nova Scotia Forest Inventory spruce volume data. Additional plots were included from stands examined in 1978. Beetle-infested trees were found in 48% of white spruce and 5% of red-black spruce stands examined (Table 2). Damage was also higher in the white spruce than in the red-black spruce stands. Negative results at any given location indicated only that the trees examined were not infested but did not preclude the presence of beetles in the area. An evaluation in a few infested stands on Cape Breton Island to determine damage indicated that infested trees (living and dead) represent 10 to 67% of the merchantable white spruce volume.

The number of spruce beetle infestations have also increased in Prince Edward Island, particularly in Queens County. Damage, at present, is mainly confined to overmature white spruce stands weakened by repeated spruce budworm defoliation.

Table 2. Number and distribution of spruce stands examined in Nova Scotia for presence of spruce beetle in 1979

Subdivision	Number of stands			
	Examined		Infested	
	white spruce	black & red spruce	white spruce	black & red spruce
Cape Breton Island	44	26	32	1
Eastern	14	18	4	1
North Central	8	50	1	0
South Central	4	55	0	1
South Shore	1	28	0	1
Valley	9	27	2	2
Western	3	40	1	7
Total	83	244	40	13

Scleroderris Canker, *Gremmeniella abietina* (Lagerb.) Morelet--The discovery of the European strain of the disease at two locations in 1978 (Magasi, M-X-100, 1979) in New Brunswick prompted another detailed survey in 1979. The survey was conducted by the New Brunswick Department of Natural Resources, the J.D. Irving Limited and the Maritimes Forest Research Centre.

The disease was identified in 76 of the 423 pine plantations examined. Infection was found in plantations of jack pine, red pine, and scots pine and in a pitch pine *(Pinus rigida)* plantation at Despres Lake, Northumberland County. The distribution of the disease is essentially the same as in 1978 (Magasi, M-X-98, 1979) with 83% of the infected plantations in the northern half of the Province. No jack pine plantations established in 1977 or later were infected but in northern New Brunswick, 25% of the plantations established in 1975 were infected and the frequency of infection increased with plantation age (e.g., 25% of 1975 plantations, 50% of 1974 plantations, 55% of 1972 plantations were infected).

Field symptoms in infected plantations indicated that most, if not all, infection was caused by the North American strain and laboratory testing to date confirms the absence of the European strain in additional plantations.

None of the 105 pine plantations examined in Nova Scotia (89 of these in Yarmouth County) were found infected. The disease is still unknown in Prince Edward Island where a special survey of plantations will be conducted in 1980.

European Pine Shoot Moth *Rhyacionia buoliana* (Schiff.)--Populations of this introduced insect are increasing. More young pine plantations are becoming infested in Nova Scotia and Prince Edward Island. The insect spreads through plantations, causing branch-tip mortality (see cover, centre photo). When populations are high severe stunting of trees results.

In Nova Scotia, moderate or severe infestations occurred in red pine plantations throughout much of the mainland. Spot surveys to determine the extent of damage showed 47% of the trees infested or over 20% of the branches affected in 8 infested plantations in the Chignecto Game Sanctuary, all trees infested with 30% of branches affected in 4 plantations in central Cumberland County, and 67% of trees infested or almost 30% of branches affected on the Garden of Eden Barrens in Guysborough County. In some cases, about 80% of almost all trees in the plantation were damaged and the trees were stunted or misshapen.

In Prince Edward Island, infestations were severe in red pine plantations at North River, and moderate at Marshfield in Queens County but the extent of the distribution and damage has not been systematically determined.

In New Brunswick, the insect was found only at Juniper, Carleton County where a few branches of a very few red pine trees were affected in a windbreak.

Eastern Hemlock Looper, *Lambdina fiscellaria fiscellaria* (Guen.)--The hemlock looper infestation of 1977 and 1978 has collapsed in central Queens County, Prince Edward Island (Fig. 3). Current defoliation on the

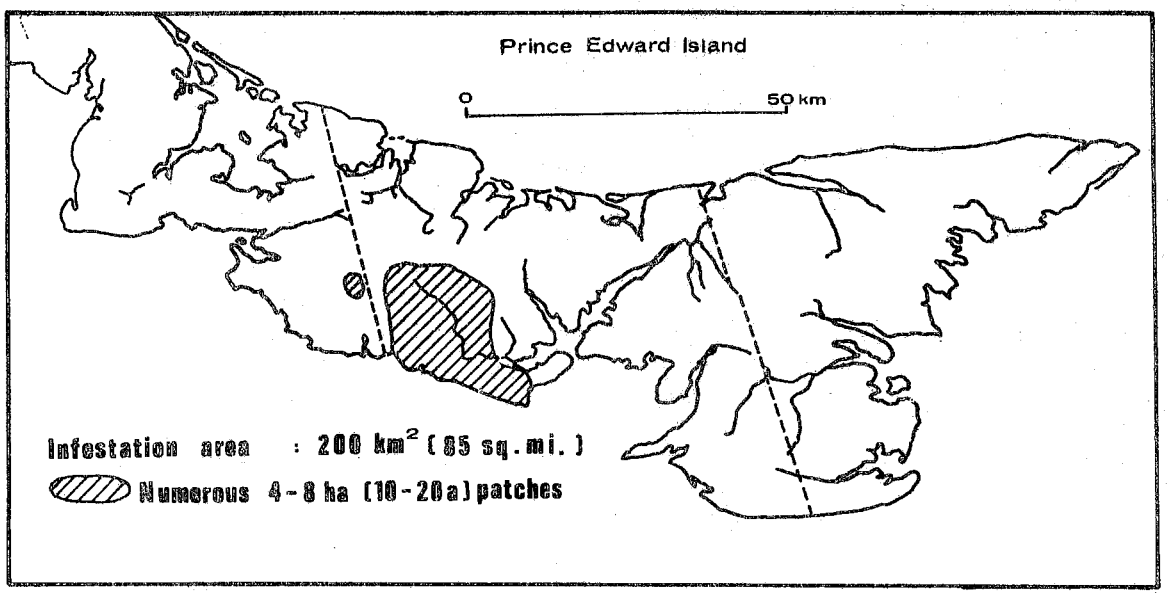


Fig. 3. Area of infestation by eastern hemlock looper, 1977 and 1978.

surviving trees was very light and was caused by the spruce budworm. However, mortality of both balsam fir and hemlock continued in 1979. Over 80% of the merchantable balsam fir and more than 91% of hemlock are dead in this area, representing about 99 m^3/ha and 15 m^3/ha dead wood, respectively. The progress of deterioration and present stand conditions are detailed in Table 3.

Insect populations were low in the Region, although larvae were collected at many locations, most commonly in Nova Scotia.

No large-scale outbreaks are expected in 1980 but conifers near Greenvale, Pictou County, N.S., where the highest larval count (5 larvae/m^3) was obtained, will receive special attention.

Larch Sawfly, *Pristiphora erichsonii* (Htg.)--Populations of larch sawfly and the resulting defoliation further declined in 1979 in the Region. Moderate or severe defoliation of larch occurred only in patches along the South Shore of Nova Scotia between Liverpool and Yarmouth and inland to Maitland, Queens County (Fig. 4). Elsewhere in the Region only a trace of defoliation was noted in a few areas.

This situation is not expected to change much in 1980.

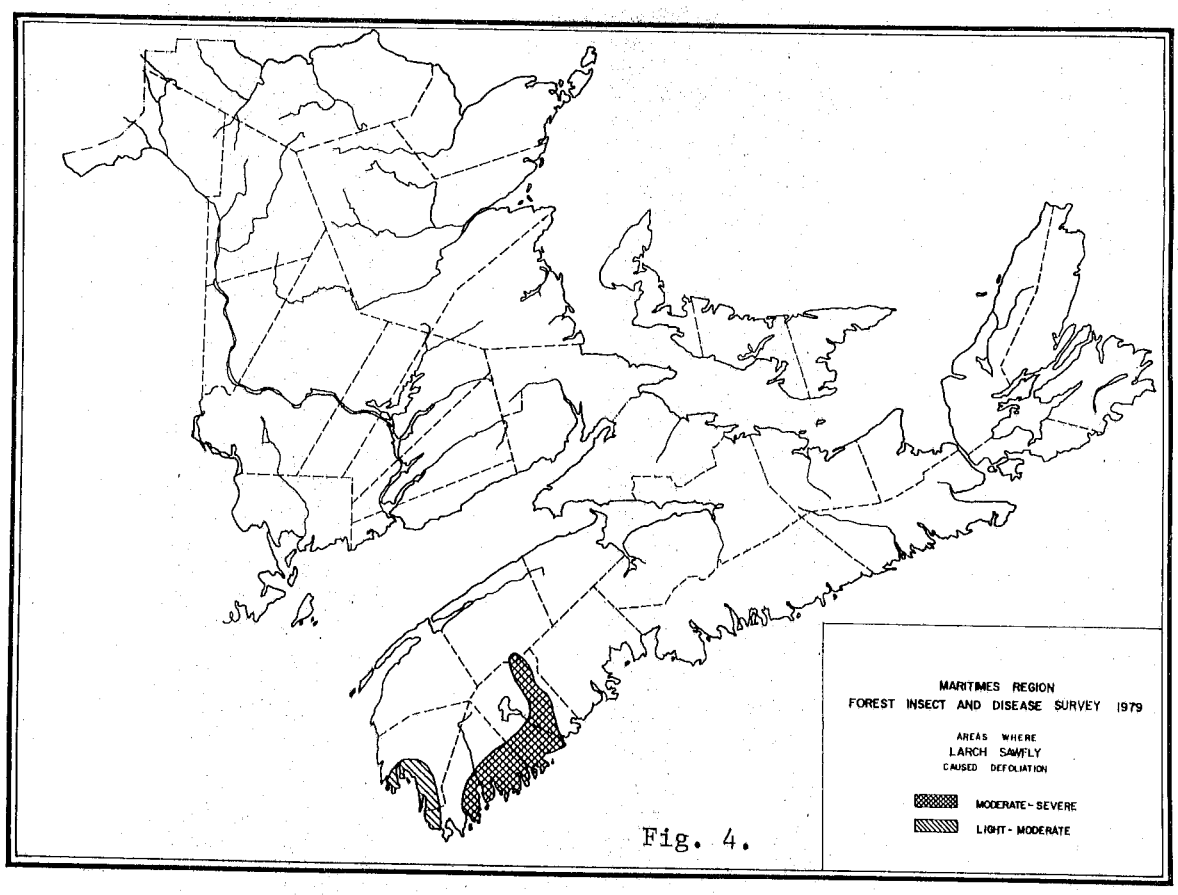


Fig. 4.

Table 3. Condition of conifers in the Central Queens County, Prince Edward Island hemlock looper outbreak area, based on merchantable volumes at five areas examined in October 1977-1979

Tree Condition	Balsam fir			Spruce (red and white)			Hemlock*		
	% of merchantable volume								
	1977	1978	1979	1977	1978	1979	1977	1978	1979
Mortality									
Dead less than 2 years	13.2	50.4	65.1	0	0	0	9.8	41.0	91.3
Dead 2 years or more	3.1	3.5	15.1	0	0	0	0	0	0
Total	16.3	53.9**	80.2**	0	0	0	9.8	41.0	91.3
Defoliation									
Current only	0	0	0.8	21.9	25.1	20.7	0	0	0
Less than 50% complete	0	13.3	12.4	49.9	66.2	70.6	0	0	0
50-90% complete	22.6	15.1	6.6	28.2	8.7	8.7	0	17.4	8.7
More than 90% complete	61.1	17.7	0	0	0	0	90.2	41.6	0
Total	83.7	46.1	19.8	100	100	100	90.2	59.0	8.7
Stand composition based on 5 areas examined	57.0% & 124 m^3/ha			13.0% & 29 m^3/ha			8.5% & 17 m^3/ha		

* Occurred at 1 of 5 areas examined.
** Standard error of ± 10.7 in 1978 and ± 5.4 in 1979.

Larch Casebearer, *Coleophora laricella* (Hbn.)--Small patches of larch trees were severely or moderately defoliated (Fig. 5) in New Brunswick at Fredericton, York County; Youngs Cove Road and Cumberland Bay, Queens County; on Deer Island, Charlotte County and in a few areas in southern Northumberland County. Light to moderate defoliation occurred in several other areas in New Brunswick and Nova Scotia, the largest in Digby County (Fig. 5). No defoliation was observed in Prince Edward Island.

Larch casebearer populations appear to be increasing in New Brunswick and patches of moderate or severe defoliation are expected in 1980 in some of the areas where the insect was present in 1979.

Balsam Woolly Aphid, *Adelges piceae* (Ratz.)--The balsam woolly aphid, an introduced insect to the Maritime Provinces has been responsible for the death or deterioration of large quantities of balsam fir in this Region in the past. Populations were high over much of the Maritimes for many years (except in northern New Brunswick) and branch, top, and tree mortality were common. Stem attack declined dramatically during the winter of 1970-71 and has remained so to the present.

In 1979, 64 points randomly distributed throughout the Region were checked for current attack. Stem attack was found at 4 of 37 locations in New Brunswick; 14 of 19 locations in Nova Scotia; and 2 of 8 locations in Prince Edward

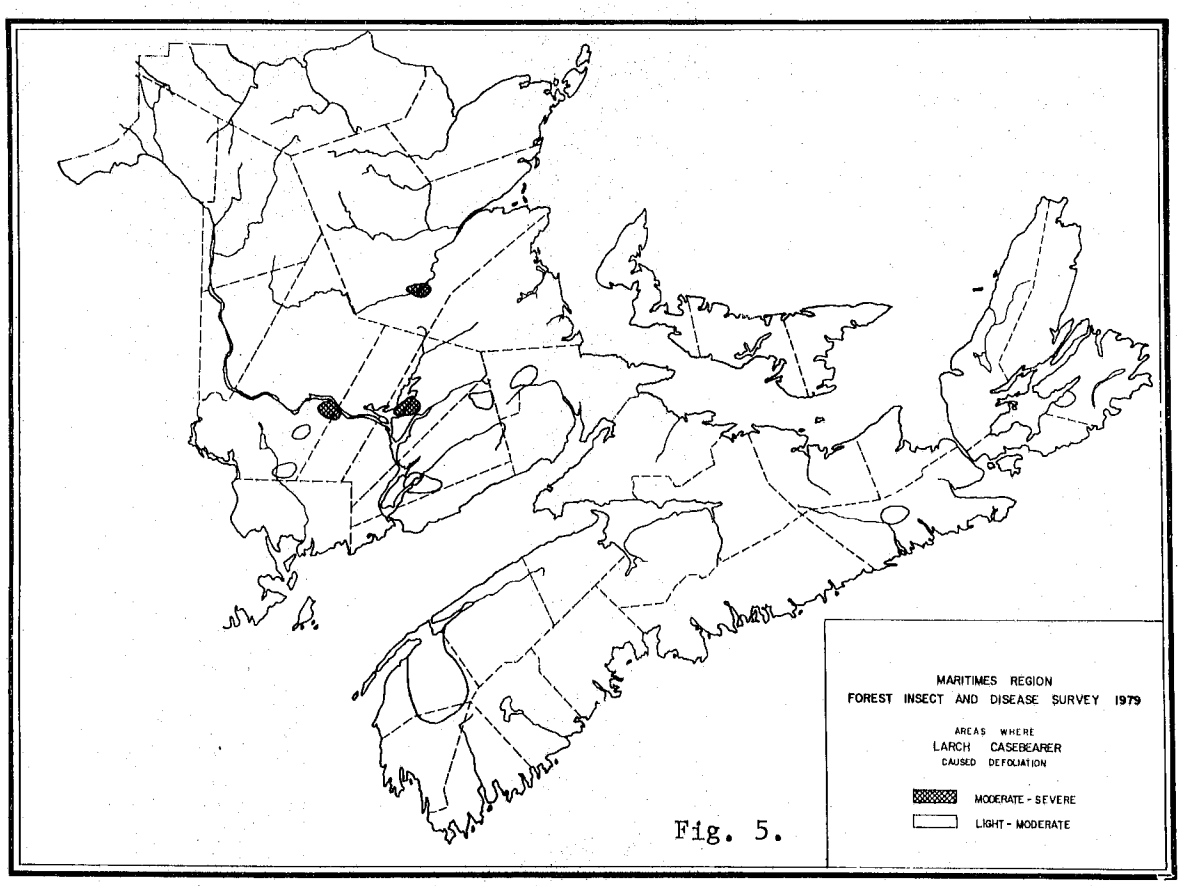


Fig. 5.

Island. In Nova Scotia and Prince Edward Island, twig attack continued to be the most common form of injury, causing a gradual deterioration of dominant and co-dominant balsam fir trees throughout the two provinces, particularly in coastal areas.

Balsam Gall Midge, *Paradiplosis tumifex* Gagné--Populations of this insect remained generally low throughout the Region. Localized outbreaks occurred only at Alberton, Prince County, and Millvale and Hopedale, Queens County in Prince Edward Island; along the Dunbar stream road, York County and near Golden Ridge, Carleton County in New Brunswick. Needle galls were noted but were very few in numbers at 17 other locations in the Region and no evidence of the insect was found in the other 39 plantations examined.

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau--The disease was found for the first time in Prince Edward Island in 1979, which leaves Newfoundland as the only disease-free province in eastern Canada. The fungus was identified in several trees near Northam and in one near Conway Station in central Prince County (Fig. 6). The trees were in areas where the highest wild elm populations exist in the Province. Control measures were initiated by the Provincial Government in 1979 and more are planned for 1980.

No major changes occurred in the distribution of the disease in the other two provinces as most new locations were either within already infected areas or on the perimeters. The noteworthy extensions occurred near Shediac in New Brunswick, and around Truro in Nova Scotia, where the disease is

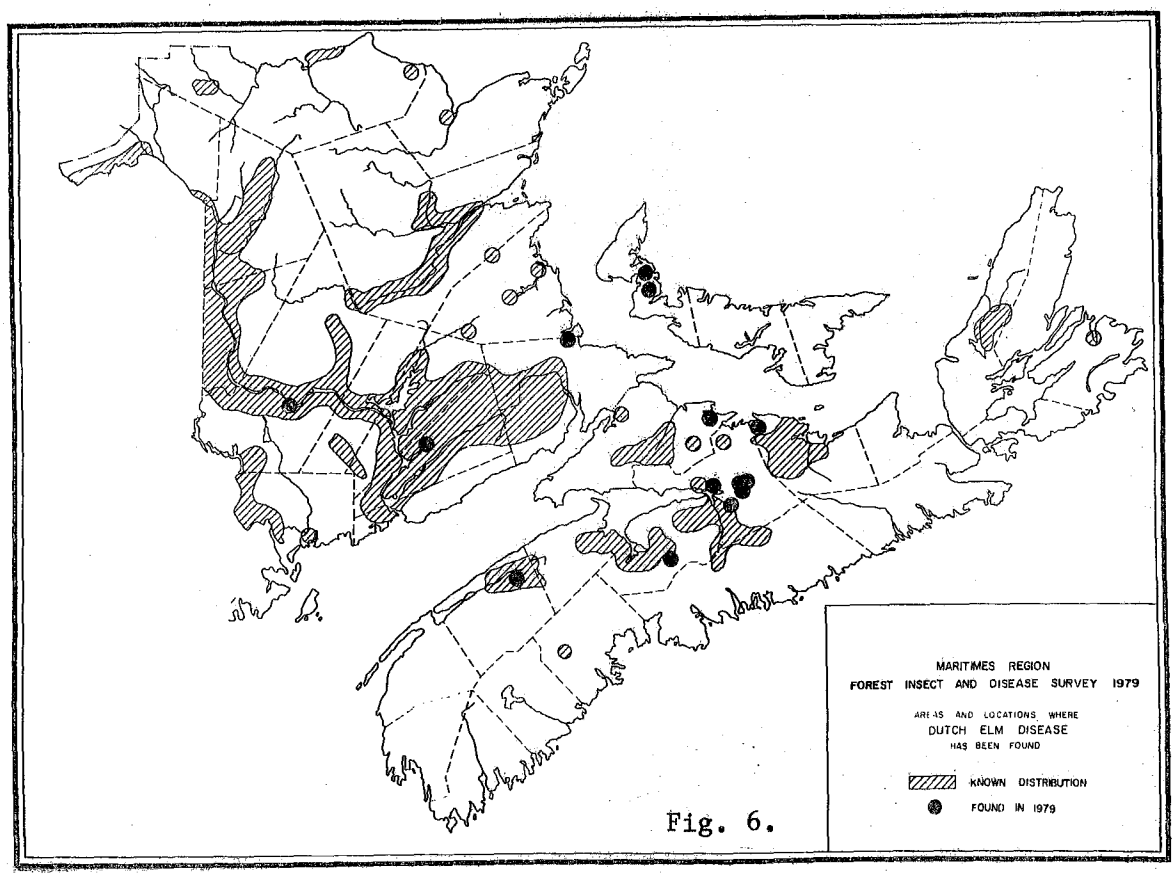


Fig. 6.

becoming more common but has not yet been found within the town itself. The disease has intensified in 1979 within already infected areas, especially in New Brunswick, and many large trees that escaped infection for years as well as small bushes succumbed to the disease.

In Fredericton, New Brunswick, infection rates within the Dutch elm disease control zone were 5 and 13%, respectively, on the south and north side of the St. John River. Populations of the native elm bark beetle, *Hylurgopinus rufipes* (Eichh.), were lower in the control zone in 1979 than in 1978, but the beetle index (beetles/10 cm^2 of tanglefoot trap) was high in the surrounding areas and ranged from 13 to 275, the highest being within a kilometre of the control boundary. Beetle populations declined for the second consecutive year near the area where all elm trees were cut in the winter of 1977-1978.

In Nova Scotia, native elm bark beetles were trapped at 3 of the 6 locations monitored in Inverness, Pictou, and Hants counties but the highest beetle index was only 2 beetles/10 cm^2 trap.

The smaller European elm bark beetle, *Scolytus multistriatus* (Marsh.), an important carrier of Dutch elm disease in the United States, was again collected in pheromone traps at St. Stephen (14 beetles) and Upper Mills (5 beetles) in Charlotte County, and at Cross Creek Station (2 beetles), York County, New Brunswick.

There was no change in the status of trees in the Dutch elm disease resistance study in 1979. Of 33 apparently healthy elm trees selected in 1967 in areas of high tree mortality, 6 remain healthy, 2 are infected but living, 21 were killed by the disease and 4 died from other causes. One of the trees located near Woodstock, New Brunswick, in an 8-ha area where the disease has been active since 1958 and has killed more than 100 trees, is the only one which is both healthy and exhibits good shade tree form (Fig. 7).

Fig. 7.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.--The forest tent caterpillar was by far the most "visible" (Fig. 8) hardwood defoliator in 1979 in many parts of the Region, especially New Brunswick. Its activity was

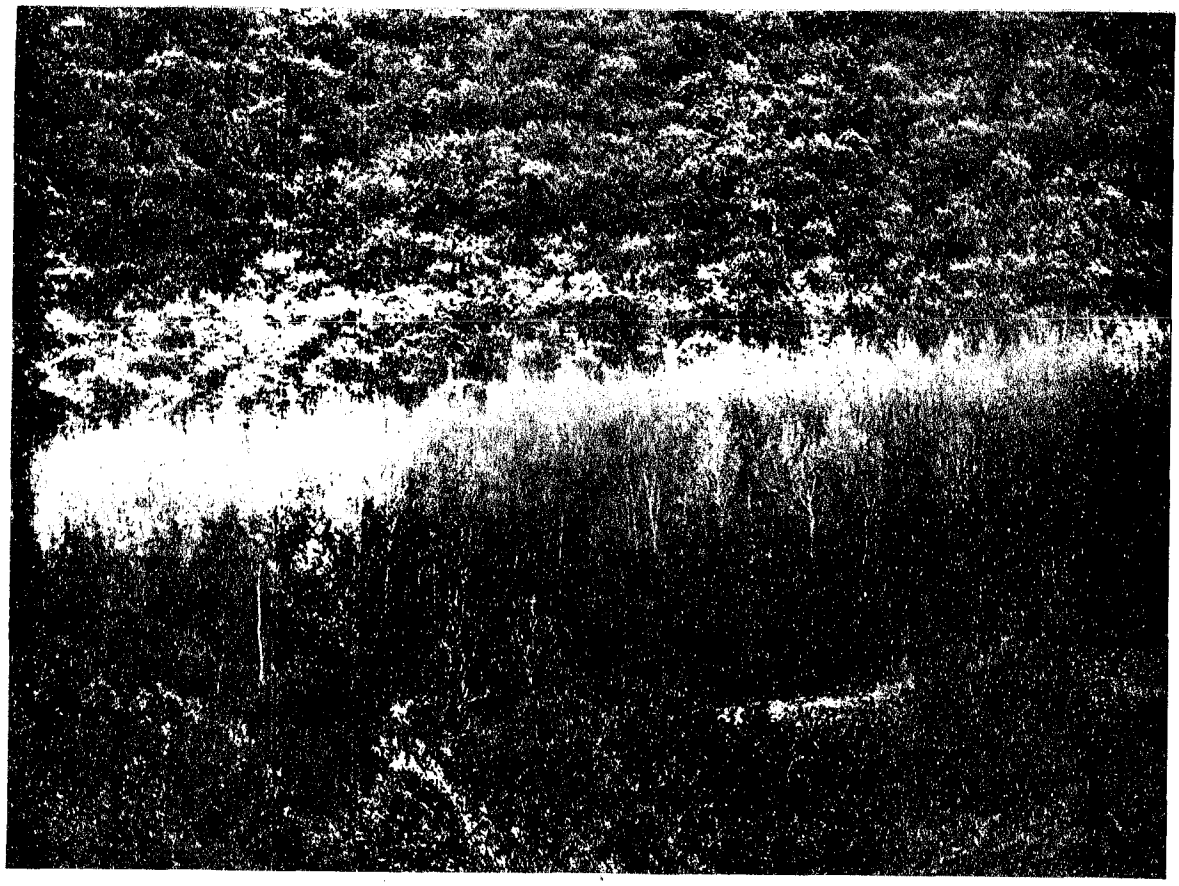


Fig. 8.

not restricted to forest stands, and there were numerous inquiries and reports of houses "covered with huge caterpillars", roads slippery due to "large numbers of squashed larvae" and trees stripped bare of foliage.

In New Brunswick, the level of defoliation varied from total to trace and the areas affected from hundreds of hectares to small patches of only a few trees. The main outbreaks (Fig. 9) occurred along the St John River from Oromocto to the Quebec border, the Bantalor area of York and Sunbury counties, the Coles Island-Cumberland Bay-Chipman area of Queens County, and from Grand Lake eastward to Moncton through Kent County to Chatham. Patches of light defoliation occurred from north of the Southwest Miramichi River to Heath Steel Mines.

In Prince Edward Island, the outbreak continued for the sixth year in Prince County and although larval mortality, due to parasitism and disease, in some collections was well above 50%, patches of moderate or severe defoliation were still common in the outbreak area. Patches of defoliated trees were more common between the Miminegash River and Leoville than in 1978 and the main infestation near Richmond spread southward.

In Nova Scotia, only a few insects were observed in Pictou County.

Fall sampling indicated that in New Brunswick, the area of infest-

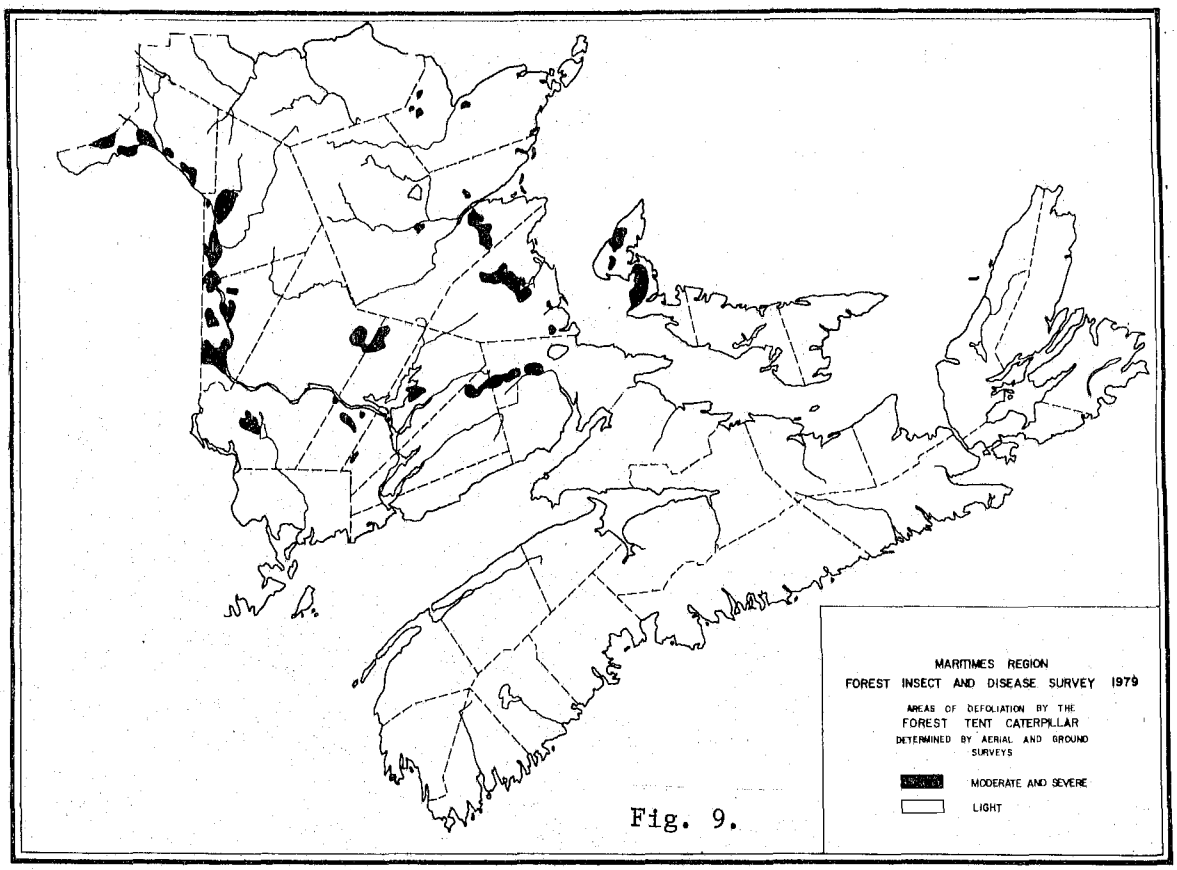


Fig. 9.

ation will expand in 1980, insect populations will be high and much defoliation should be expected. The outbreak in Prince Edward Island is likely to continue but defoliation should become more patchy. No large-scale outbreaks are expected in Nova Scotia.

Oak Leaf Shredder, *Croesia semipurpurana* (Kft.)--Severe defoliation of red oak stands occurred over large areas of Queens and Lunenburg counties in Nova Scotia, and in the St. John River Valley from Woodstock to Browns Flat in New Brunswick. Moderate or light defoliation was observed in patches or on shade trees at scattered locations in Pictou County and the southwestern part of Nova Scotia; in Queens, Northumberland, and Westmorland counties in New Brunswick, and at Murray River, Kings County and north of Alberton, Prince County in Prince Edward Island (Fig. 10).

The infestation in Lunenburg and Queens counties in Nova Scotia has been active for the last 5 years and has gradually increased in size. An assessment at 8 locations (Table 4) showed trees in the early stages of decline in the form of dieback. No recent tree mortality was recorded. Defoliation was either moderate or light on most trees in early June but by mid-July defoliated trees produced a new crop of leaves. Larval sampling on semi-mature trees in late May and early June in both Nova Scotia and New Brunswick showed uneven larval distribution, more larvae being located in the top section of the crown.

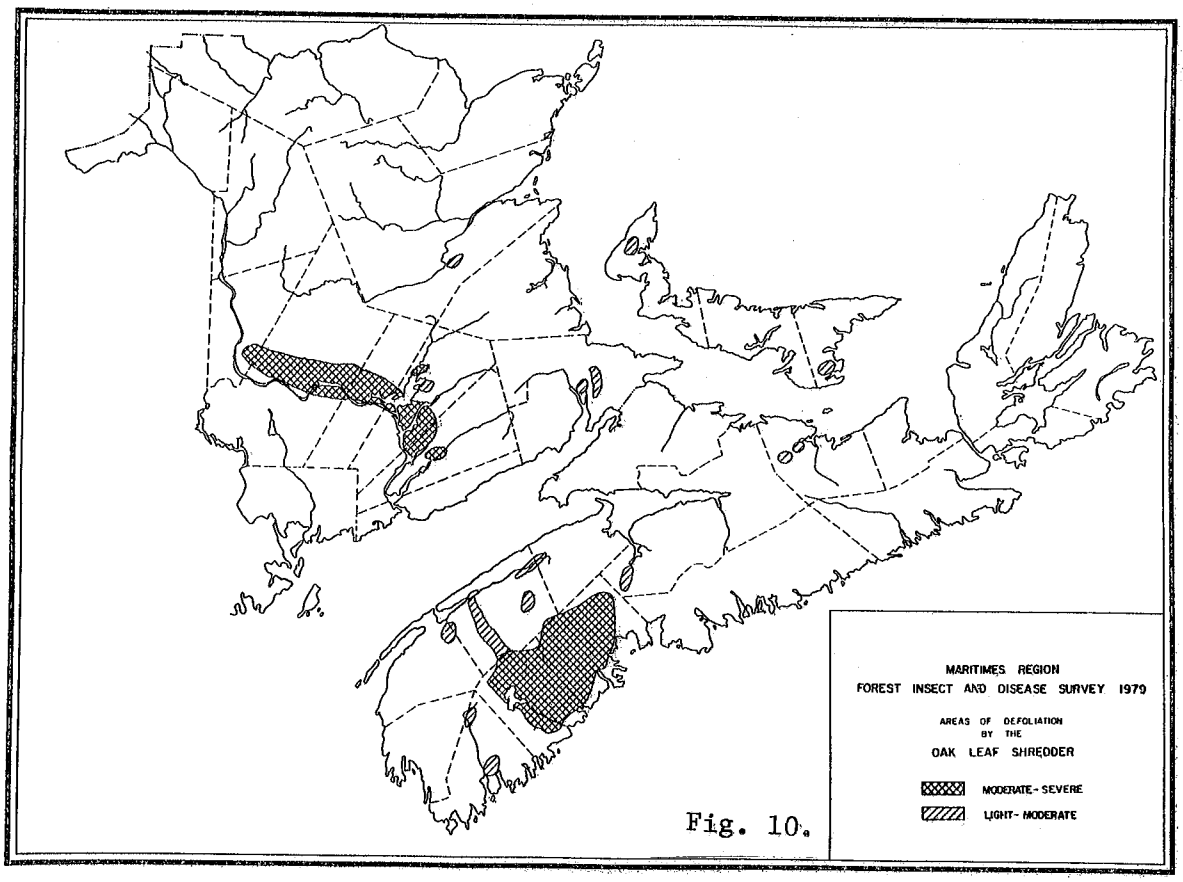


Fig. 10.

Table 4. Tree condition and defoliation estimates of red oak in western Nova Scotia after 5 years of oak leaf shredder activity (average of 8 locations, June 1979)

Tree condition		Defoliation	
Class	% of trees in class	Class	% of trees in class
Normal	0.9	Light	27.5
<50% of crown dead	92.7 ± 4.7	Moderate	56.9 ± 8.6
50-90% of crown dead	1.8	Severe	11.0
Dead (old)	4.6	Dead trees	4.6

Defoliation equal to that of 1979 is expected to occur over much of the same areas in 1980.

Greenstriped Mapleworm, *Dryocampa rubicunda rubicunda* (F.) and **Pinkstriped Oakworm,** *Anisota virginiensis virginiensis* (Drury) --These two insects were often found together in the same areas, feeding on red maple and birch, respectively.

In New Brunswick, the general distribution of the insects remained unchanged from 1978 although defoliated patches were more common than previously reported (Fig. 11). Moderate or severe defoliation of both hosts occurred in southwestern New Brunswick, red maple was affected in patches within a 20 km^2 area near Malakoff, Westmorland County, mature and semi-mature maple, birch, and beech were severely defoliated over 250 ha near the southwest side of Oromocto Lake and young red maple trees were similarly affected at Memramcook, Westmorland County.

At Caribou Lake, Queens County where the two insects have caused at least moderate defoliation for the third consecutive year, many trees have dieback and a few have recently died (Table 5) (Fig. 12). Evidence of the **bronze birch borer,** *Agrilus anxius* Gory, was observed on some white birch trees in the area. At McDougall Lake, Charlotte County after two years of moderate or severe defoliation, 13% of the red maple trees had 50 to 90% crown mortality. The other

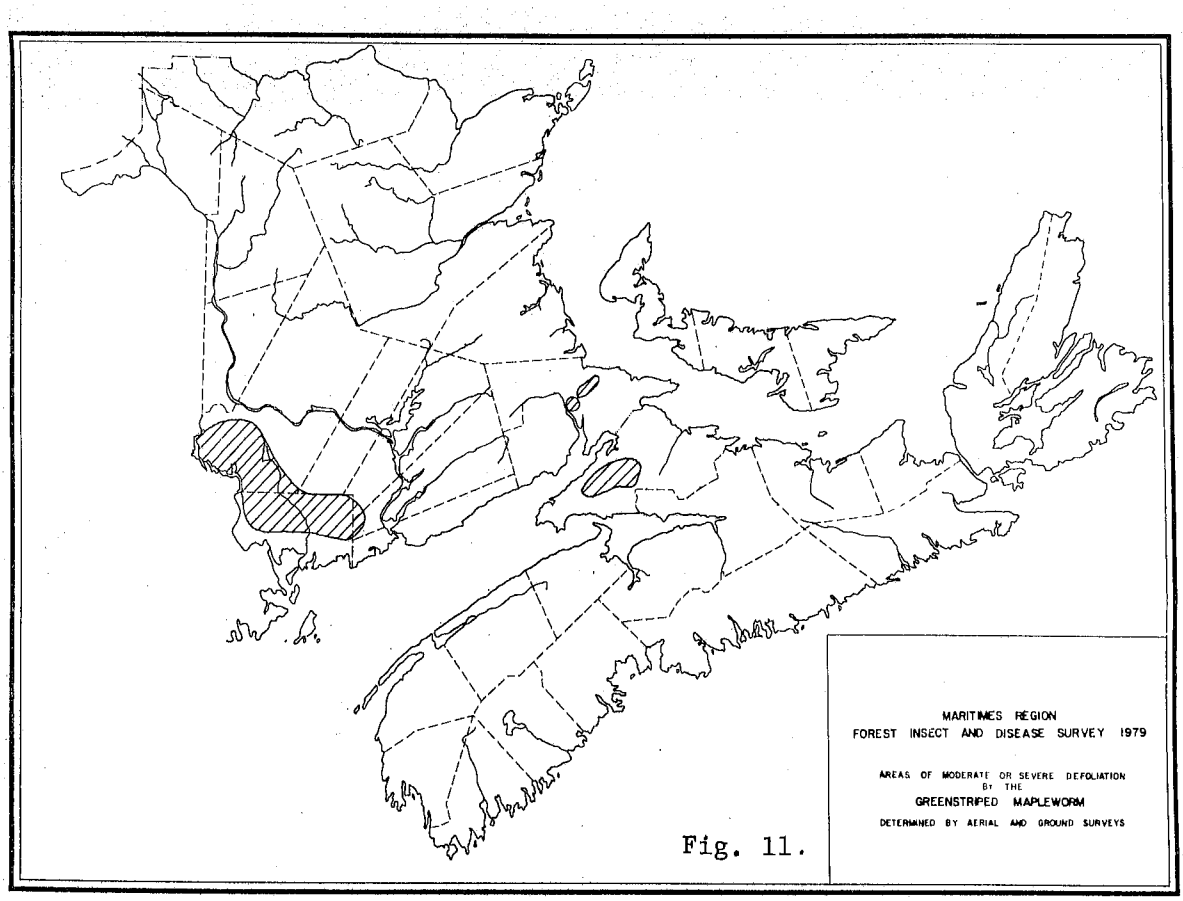


Fig. 11.

Table 5. Condition of red maple and white birch after two years of moderate or severe defoliation by greenstriped mapleworm and pinkstriped oakworm at Caribou Lake, New Brunswick (average of 3 plots, June 1979)

Tree condition	Red maple	White birch
	% of trees examined	
Normal	--	10.0
<50% of crown affected	79.3*	80.0*
50 - 90% of crown affected	6.9	--
90 - 100% of crown affected	--	3.3
Recently dead	13.8	6.7
Species composition	27%; 13 m^3/ha	55%; 25 m^3/ha

* Standard error = ± 11.2 and ± 0.7 for red maple and white birch, respectively.

Fig. 12.

trees exhibited dieback, many of them with almost half of their branches dead. With moderate or severe defoliation on 20% of them in 1979, tree mortality should commence by the spring of 1980 in this area.

In Nova Scotia, on the Chignecto Game Sanctuary defoliation of mature maple stands was light but many young trees in the area were completely stripped of foliage.

Near Hamilton, Prince County, Prince Edward Island the green-striped mapleworm caused moderate or severe defoliation on private woodlots in an area of about 7 ha.

Maple Leaf Roller, *Cenopis acerivorana* MacK.--Leaf rolling on red maple (Fig. 13) and to a lesser extent on sugar maple was widespread over much of New Brunswick (Fig. 14). The level of attack was variable but over large areas in the central and northeastern part of the Province and in Madawaska County leaf rolling was severe.

In Nova Scotia, moderate attack occurred in Inverness and Victoria counties mostly on sugar maple. The area of infestations increased somewhat from previous years and the insect was found for the first time at Glenora Falls and Strathlorne in Inverness County and at Middle River, Victoria County.

Only light leaf rolling occurred in Prince Edward Island, in western Prince County, where red maple was affected.

Fig. 13.

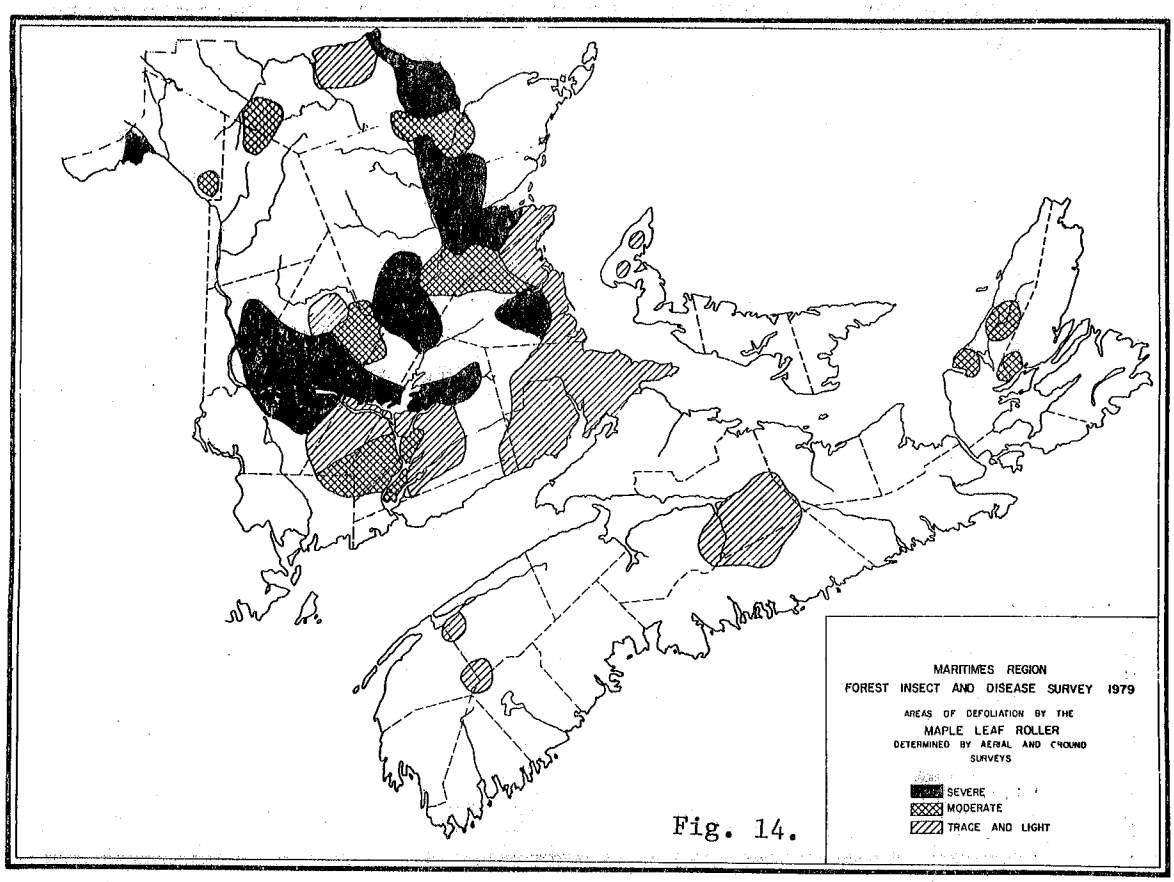


Fig. 14.

Anthracnose of Maple, *Kabatiella apocrypta* (Ell. & Ev.) Arx--In New Brunswick, discoloration of both sugar and red maple was severe over 500 ha at Edmundston and on 10 ha at Riceville, Madawaska County. Severe or moderate browning (see cover, top photo) of one or both hosts occurred at several other areas in Madawaska, Restigouche, Northumberland, York, Kings, Kent, and Albert counties (Fig. 15).

In Nova Scotia, severe or moderate leaf browning was observed on scattered red maple trees in Kings and Hants counties.

The disease was widespread on ornamental maples in both New Brunswick and Nova Scotia, the high incidence, no doubt, is related to the ideal conditions for infection that existed in the wet early summer.

Birch Casebearer, *Coleophora fuscedinella* (Zell.)--Severe leaf discoloration occurred in many patches of varying size on white birch and wire birch in a wide band across south-central New Brunswick and in some areas of Northumberland and Westmorland counties. Alders were affected in Fundy National Park. Little leaf discoloration occurred in northern New Brunswick except at Riceville, Madawaska County, where browning was moderate (Fig. 16).

In Nova Scotia, severe or moderate leaf browning occurred only in a few lowland areas of Cape Breton Island. Elsewhere, al-

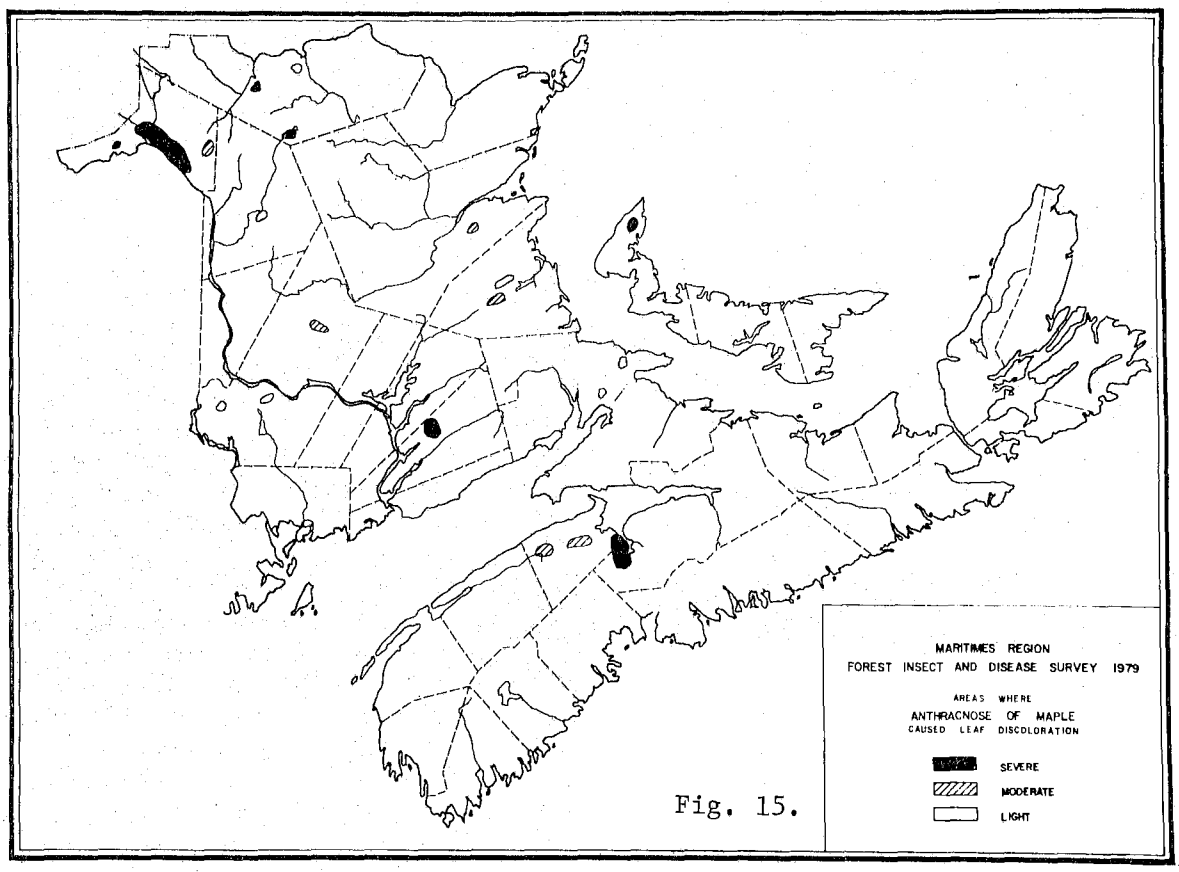

MARITIMES REGION
FOREST INSECT AND DISEASE SURVEY 1979
AREAS WHERE
ANTHRACNOSE OF MAPLE
CAUSED LEAF DISCOLORATION
SEVERE
MODERATE
LIGHT

Fig. 15.

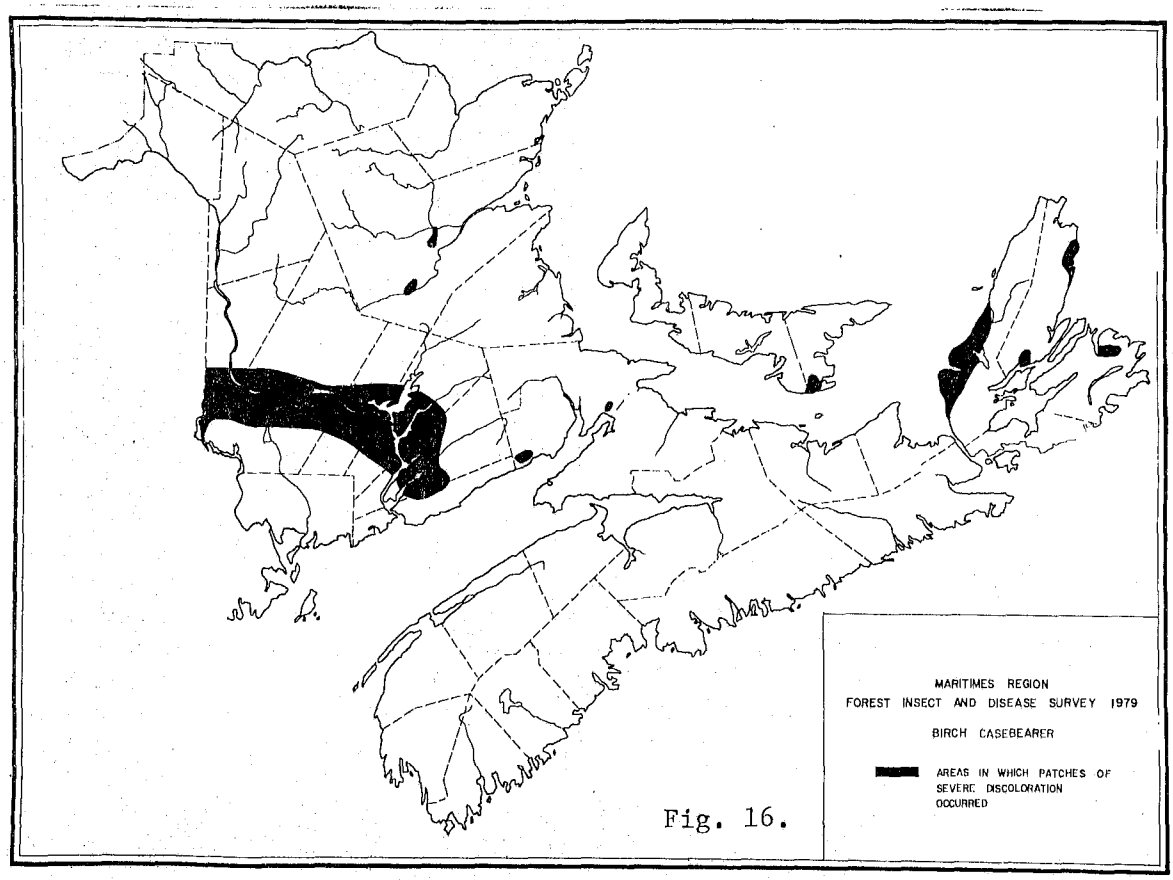

MARITIMES REGION
FOREST INSECT AND DISEASE SURVEY 1979
BIRCH CASEBEARER
AREAS IN WHICH PATCHES OF
SEVERE DISCOLORATION
OCCURRED

Fig. 16.

though the insect (Fig. 17) was was present, little discoloration occurred.

In Prince Edward Island, discoloration was severe on some white birch trees between High Bank and Murray River and light or moderate elsewhere on white birch and alder in some areas in western Kings County.

Fall sampling indicates severe or moderate discoloration in 1980 only in the Lac Baker area, Madawaska County, and possibly at McDougall Lake, Charlotte County in New Brunswick. Only light browning is expected elsewhere in the Region.

Fig. 17.

Willow Blight, *Venturia saliciperda* Nuesch--Leaf discoloration was general throughout much of the Region and the intensity of the disease was the highest noted in several years. The rainy early summer provided ideal conditions for infection. All species of exotic and native willows were affected, particularly weeping willow and bay leaf willow.

Trees were severely discolored over large areas in Northumberland, Gloucester, Restigouche, Madawaska, York, and Westmorland counties in New Brunswick; in Colchester, Cumberland, Guysborough, Victoria counties, and throughout the Annapolis Valley in Nova Scotia; in Summerside and Charlottetown in Prince Edward Island, but infection was by no means restricted to these areas.

Satin Moth, *Leucoma salicis* (L.)--Usually considered an insect of ornamental poplars, satin moth caused moderate and severe defoliation of numerous trembling aspen trees along the highway from Harcourt to the St. Paul road in Kent County, New Brunswick. Elsewhere in the Region, severe defoliation of ornamental silver poplar occurred at scattered locations in Kent, Westmorland, Queens, and Sunbury counties and larvae were noted in Carleton County in New Brunswick, in Inverness, Richmond, Colchester, and Cumberland counties in Nova Scotia and at five widely separated locations in Prince Edward Island. In addition, Carolina poplar trees were defoliated in Central Bedeque and at Bunbury in Prince Edward Island.

Moderate or severe leaf skeletonizing of poplar trees in August indicates possible severe defoliation in 1980 in some areas of Carleton, Sunbury, and Queens counties, the Moncton area of Westmorland County and along the Harcourt to St. Paul road in Kent county in New Brunswick. No doubt ornamental trees in the other two provinces will also be defoliated.

Leaf Rollers on Poplar--In Nova Scotia, the main infestation by *Epinotia* sp., reported in 1978 along the Trans-Canada Highway east of Oxford, continued and extended eastward to West Wentworth and westward to Springhill Junction and Maccan in patches of varying sizes. Leaf rolling was moderate at several areas of Pictou County and evidence of the insect was noted for the first time in Cape Breton Island.

In New Brunswick, leaf rolling by various insects was widespread throughout the Province and areas of Sunbury, Kings, Northumberland, Westmorland, and Kent counties were severely infested.

In Prince Edward Island, trembling aspen leaves were rolled in the Tyne Valley area of Prince County.

Elm Leafminer, *Fenusa ulmi* Sund.--Although the elm leaf miner is not a forest insect, it should be mentioned because of its wide distribution wherever its host, English elm, is planted. High populations of this insect mask the symptoms of Dutch elm disease and interfere with the detection surveys. In Nova Scotia, leaf browning was severe in Amherst, Dartmouth, Earltown, Halifax, Kentville, Liverpool, Paraside, Parrsboro, Pictou, Port Williams, Pugwash, River John, Springhill, Truro, Windsor, and Wolfville, in Prince Edward Island at Bunbury, Charlottetown, Covehead, Eldon, Montague, Murray River, and Summerside. In New Brunswick, moderate browning occurred on a few trees at Dorchester and Sackville and a trace of browning was noted on a few trees at St. Andrews.

Gypsy Moth, *Lymantria dispar* (L.)--In spite of intensive surveys, adult males caught in pheromone traps were the only life stage of the gypsy moth found in the Region.

Tanglefoot-treated boards at 6 locations each in coastal areas of southwestern New Brunswick and Nova Scotia, facing prevailing winds and infestations in Maine, failed to capture windborne larvae. No larvae were found and no defoliation was observed anywhere in the Region.

The adult trapping program (Fig. 18) and the follow-up egg-mass surveys were again a cooperative undertaking of the Forest Insect and Disease Survey and the Plant Quarantine Division of Agriculture Canada. In New Brunswick, 43 of 61 traps were positive, many of them with multiple catches. Some of the highest catches (Fig. 19) were in southwestern New Brunswick:

St. Andrews	44	male	moths
St. Andrews	32	"	"
Grand Manan Island (North Head)	15	"	"
Campobello Island (Welshpool)	10	"	"
St. Stephen	11	"	"

In all, 26 of 29 traps in southwestern New Brunswick were positive; 22 of these had multiple catches. In Nova Scotia, 15 of 59 traps were positive; the highest number of adults in a single trap was 4 at Darling Lake, Yarmouth County. Traps, with one adult, were positive for the first time at two locations in the Cape Breton Highlands National Park and at Amherst, Cumberland County. The most significant change occurred

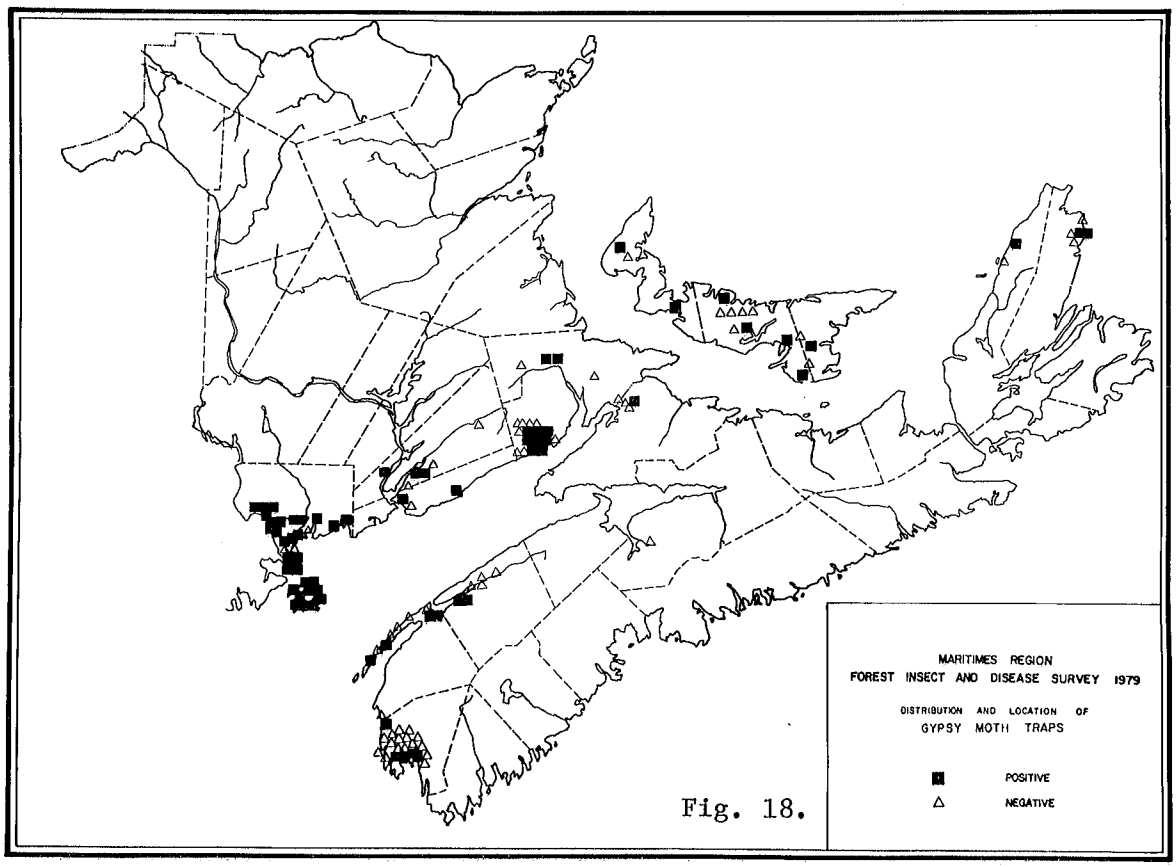

MARITIMES REGION
FOREST INSECT AND DISEASE SURVEY 1979
DISTRIBUTION AND LOCATION OF
GYPSY MOTH TRAPS
POSITIVE
NEGATIVE

Fig. 18.

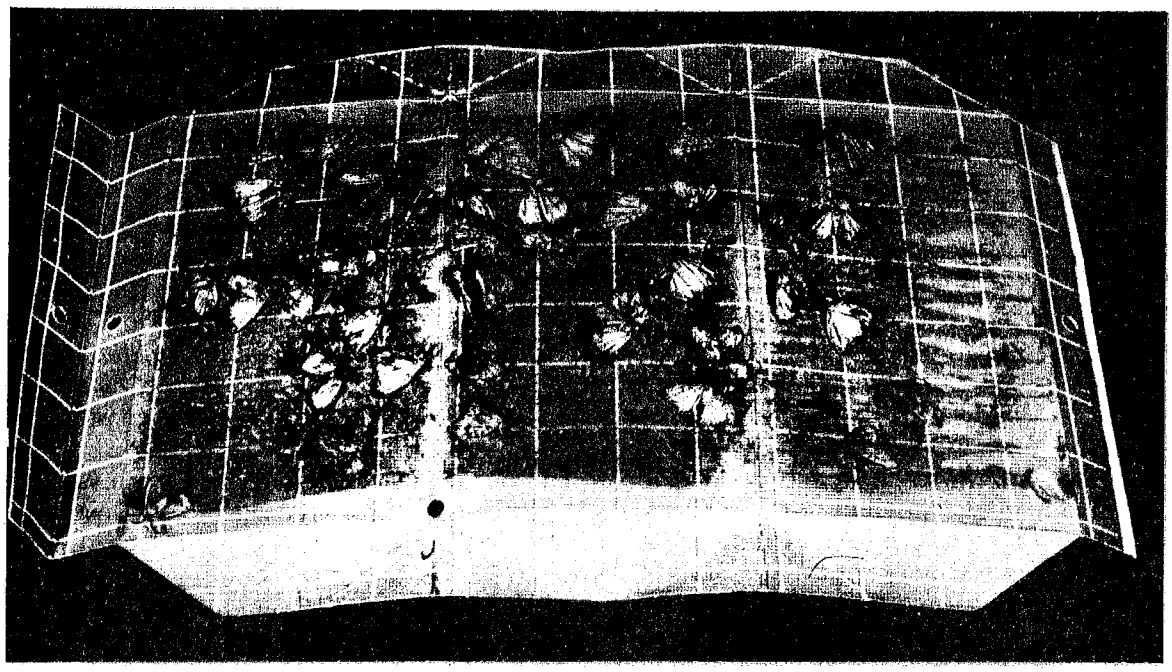


Fig. 19.

in Prince Edward Island where 7 of the 15 traps were positive. This was the first year that gypsy moth adults were ever caught in that province.

Egg-mass searches were conducted in all areas where three or more adults were captured and around all positive trap locations in Prince Edward Island. No egg masses were found in the Region.

Deterioration of Birch--Widespread browning and loss of foliage of white birch occurred in New Brunswick on Campobello, Deer, and Grand Manan Islands, and in a coastal strip from west of Saint John to east of the Fundy National Park. **Bronze birch borer** *(Agrilus anxius* (Gory)) tunnelling under the bark was common in some parts within the affected area, mostly on trees in weakened condition, with sparce, underdeveloped, discolored foliage. *Septoria* sp., a fungus that causes leaf spots, was common in parts of the same area. Its role in the deterioration of birch is uncertain. Conditions which predisposed white birch to the bronze birch borer attack are not known. However, the "ground hog day storm" of 1976, that deposited large amounts of ocean salt on trees and caused considerable foliage browning on conifers, far inland, may be a factor.

A similar condition occurred in Nova Scotia, west of Parrsboro in Cumberland County and white birch trees lost their leaves unusually early in 1979.

Abiotic Injuries--Discoloration of foliage, mostly on conifers, caused by winter drying, roadside salt, and late spring frosts caused concern, but none of these conditions was a major problem. The most significant abiotic factors were wind and ice.

In central New Brunswick, a freezing rain on January 7 and 8, 1979 coated everything with 2 cm of ice. This was followed by a windstorm on January 14. As a result, many trees, primarily birch and poplars were bent and broken (see cover, bottom photo) along highways, edges of fields, and on cut-overs. Areas most affected were from Upper Gagetown to Queenstown, Youngs Cove, East Scotch Settlement, from Jemseg to Cambridge Narrows, Queens County; around Geary, Sunbury County; and between McLean Settlement and Pine Ridge, Kent County. Red pine south of Fredericton Junction were damaged.

On May 31, a heavy hail storm damaged foliage on deciduous trees over a 100 km^2 area between Elgin, Pictou County, and St. Joseph, Antigonish County in Nova Scotia. An area of more than 2 km^2 was similarly affected at Green's Brook, Pictou County.

Jack pine, red pine, and black spruce planted in 1976 were severely damaged over a 500-ha area, as a result of a hail and rainstorm in late June or early July near Salmon River, Victoria County in New Brunswick. Damage included broken twigs, bark peeled off stems and branches, and battered needles.

Strong winds and rain on July 5, followed by below freezing temperatures caused moderate or severe leaf browning of most deciduous trees in areas with northwest exposure on Cape Breton Island between Port Hastings and Cape St. Lawrence, Inverness County, and between Big Intervale, Cape North, and White Point, Victoria County. Current shoots of white spruce also were severely damaged near the coast between Grand Etang and Cheticamp.

Other Insects and Diseases--Forest pests of lesser importance in 1979 are included in the following tables to provide information on the history and fluctuation in populations of these pests. For instance, whitemarked tussock moth populations reached a "low" in 1979 after several years of major economic importance but will start rising in a few years and the insect will again become a major pest in the Region. Other organisms may never reach regional importance but they cause significant local concern.

Forest pests of coniferous hosts and deciduous hosts are listed alphabetically, according to their common name.

CONIFEROUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Balsam shootboring sawfly *Pleroneura brunneicornis* Rohwer	Region	In New Brunswick, damage to balsam fir shoots moderate near Priceville, Northumberland Co, light at Stanley, York Co, and Little River, Sunbury Co, trace at Harvey, York Co, Bristol, Carleton Co, and near States Lake, Restigouche Co; levels low throughout Nova Scotia with a few damaged shoots found in various locations in Lunenburg, Pictou, Kings, and Annapolis counties; numbers low at four locations in Kings Co, P.E.I. There is an indication that populations of this insect may be higher next season, particularly in central New Brunswick. Christmas tree growers should be watchful.
Balsam twig aphid *Mindarus abietinus* Koch	Region	Populations were very low throughout the Region and expected to remain low in 1980.
Cedar leafminers *Argyresthia aureoargentella* Brower *Argyresthia thuiella* (Pack.) *Pulicalvaria thujaella* (Kft.)	Prince Edward Island	The outbreak at Muddy Creek, Prince Co, first reported in 1971 over about 12 ha increased in size until 1978 when it covered about 2000 ha. The area affected remained the same in 1979 and trees continued to deteriorate. Further deterioration in tree condition is anticipated in 1980.
Eastern Larch beetle *Dendroctonus simplex* LeConte	Region	Mature and overmature larch trees continued to become infested and die, especially in Nova Scotia and Prince Edward Island. Near Boiestown, Northumberland Co, N.B. some trees that were classified "recently infested" in June were dead by fall.
Globose gall rust *Endocronartium harknessii* (J.P. Moore) Y. Hiratsuka	Region	No significant changes from previous years. In some plantations up to 25% of jack pine trees infected.

Organism	Locality	Remarks
Needle rusts of balsam fir *Pucciniastrum epilobii* Otth *Pucciniastrum* sp.	Region	Moderate infection of new shoots in the Cains River area, Northumberland Co, N.B. Light or trace in other areas where balsam fir was examined in New Brunswick, light in several areas in Nova Scotia and trace at 7 locations in Prince Edward Island. Needle rust was not found at Mabou Highlands, Inverness Co, N.S. where moderate or severe injury occurred in 1978.
Needle rusts of spruce *Chrysomyxa ledicola* Lagh. *Chrysomyxa* sp.	Nova Scotia	Infection severe on black spruce in a 1-ha area near Clayton Hill, Digby Co, light or moderate on 10% of black spruce in the Garden of Eden Barrens, Guysborough Co, N.S. These rusts were not found at Stewarts Hill, East Quoddy, Glenmore, Halifax Co or in the Chignecto Game Sanctuary, Cumberland Co where infections occurred in 1978.
Pine tortoise scale *Toumeyella parvicornis* (Cockerell)	New Brunswick	Infestations on jack and red pine trees continued in the plantations at Despres Lake, Northumberland Co; branch and tree mortality of jack pine was common, 60 of 100 trees in one plantation were infested and 6 of these were covered by sooty mold. This outbreak is expected to continue in 1980 and the condition of the plantation will be evaluated.
Red pine sawfly *Neodiprion nanulus nanulus* Schedl.	Prince Edward Island Nova Scotia	In Prince Edward Island, varying degrees of defoliation occurred again in a red pine plantation at Bridgetown, Kings Co, and a few colonies were found in a small plantation at Brookvale, Queens Co. In Nova Scotia, the insect was not found on the Garden of Eden Barrens where defoliation has been observed in the past few years. Two mature red pine trees north of Conns Mills, Cumberland Co, N.S. were moderately defoliated.

CONIFEROUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Shoot blight *Sirococcus strobilinus* Preuss	Nova Scotia New Brunswick	Shoot discoloration in red pine plantations in Nova Scotia at variable levels and comparable to those in 1978. Moderate or severe infections occurred in areas of Colchester, Lunenburg, Halifax and Hants counties. The fungus was isolated from one red pine in a nursery at Juniper, Carleton Co, N.B.
Spruce bud midge *Rhabdophaga swainei* Felt	Region	Extensive observations throughout the Region showed populations at a very low level. The insect was found in all three provinces but damage was negligible. No increase in populations expected in 1980.
Spruce bud scale *Physokermes piceae* (Schrank)	New Brunswick	Present on black, white, and red spruce in plantations in the Black Brook area of Victoria Co but does not appear to be causing damage.
Spruce coneworm *Dioryctria reniculelloides* Mutuura & Monroe	Region	In Nova Scotia, 42.9% of black spruce cones were severely damaged at Kelly Road, Victoria Co and 30.9% were affected at Miners Road, Victoria Co where the population level in white spruce foliage was 31 larvae/m^2. Population levels were low elsewhere in Nova Scotia and in the two other provinces.
Spruce gall midge *Mayetiola picae* Felt	New Brunswick	Found in a white spruce plantation at Florenceville, Carleton Co, and on two ornamental trees at Fredericton.
Swaine jack pine sawfly *Neodiprion swainei* Middleton	Nova Scotia	The outbreak on the Patriquen Road, in the Chignecto Game Sanctuary, Cumberland Co continued in 1979. Spraying was carried out during the season and the outlook for 1980 is uncertain.

Organism	Locality	Remarks
Whitemarked tussock moth *Orgyia leucostigma* (J.E. Smith)	Region	The moderate and severe infestation in Guysborough County and the light and moderate infestation in Inverness County, reported in 1978, collapsed and only trace of defoliation was observed in 1979 in Nova Scotia; populations remained very low throughout New Brunswick and Prince Edward Island. Populations are expected to remain low throughout the Region in 1980.
White pine weevil *Pissodes strobi* (Peck)	New Brunswick Nova Scotia	The following counts indicate the extent to which the insect affects young trees in New Brunswick: 75% of white pine trees affected at Fredericton Junction, 50% at Tracyville, Sunbury Co, 64% at Limestone, Carleton Co, 52% on Acadia Pulp Co Rd, Northumberland Co, 46% at St. Ignace, Gloucester Co, 72% at Portageville, Kings Co, 28% of Norway spruce at Monument, Carleton Co, and 48% at Kingsclear, York Co. Varying degrees of infestation, from negligible to light, also occurred on spruce, and on red, jack and scots pine in numerous areas of the Province. In Nova Scotia, 10% of Colorado blue and Norway spruce trees were infested in a nursery at Lawrencetown, Annapolis Co.
Yellowheaded spruce sawfly *Pikonema alaskensis* (Rohwer)	Region	Defoliation severe in New Brunswick on scattered black spruce trees in a 110-ha area at Upham, Kings Co, in Nova Scotia near Upper Stewiacke, between Onslow and Debert, Colchester Co, at Denver, Guysborough Co, and between the Halifax Airport and Enfield, Halifax Co. Further tree mortality occurred in a spruce plantation at Wentworth Centre, Cumberland Co, where some trees died in 1978. Also observed near St. Martins, Kings Co, N.B., Kennetcook, Maitland, Hants Co, near Two Mile Lake, Guysborough Co, N.S. and at Brookvale, Queens Co, P.E.I.

DECIDUOUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Alder flea beetle *Altica ambiens alni* (Harris)	Region	Common throughout Nova Scotia with patches of moderate and severe browning in Pictou, Colchester, Cumberland, Annapolis, Hants and Kings Co; patches of browning scattered throughout Prince Edward Island; in New Brunswick, populations low except north of St. Stephen, Charlotte Co, where severe browning occurred in a small patch.
Aspen casebearer *Coleophora innotabilis* Braun	Prince Edward Island	Browning of various intensity on mostly less than 0.5-ha patches common throughout the Province.
Aspen leaf beetle *Chrysomela crotchi* Brown	Nova Scotia	Moderate and severe browning of trembling aspen over 1.5 ha at Dunn Lake, Annapolis Co.
Birch lace bug *Corythuca pallipes* Parsh.	Nova Scotia	Light and moderate browning of white and yellow birch over about 2.6 km^2 at Rocky Mountain, Pictou Co.
Birch leafminer *Fenusa pusilla* (Lepeletier)	Region	Severe leaf browning of wire birch, and to a lesser extent white birch, occurred throughout much of the southern two-thirds of New Brunswick. In the northern one-third of the Province only traces of browning occurred at scattered locations. In Nova Scotia, foliage browning, again common throughout the Province, was severe on wire birch in Colchester, Pictou, Cumberland, central Queens and Yarmouth Counties, and throughout the Annapolis Valley; browning was also severe in eastern Prince Edward Island. This insect, a perennial pest, can be expected at the same levels again in 1980.
Birch sawfly *Arge pectoralis* (Leach)	Nova Scotia	Severe defoliation of white birch over a 5-ha area on MacKenzie Mountain, Inverness Co. An ornamental birch completely defoliated at West New Annan, Colchester Co.

Organism	Locality	Remarks
Bruce spanworm *Operophtera bruceata* (Hulst)	New Brunswick Prince Edward Island	Defoliation moderate on yellow birch at Telegraph Hill, Kings Co, N.B.; light at Dunstaffnage, Queens Co and North Tyron, Prince Co, P.E.I. Populations are expected to remain generally low next season. (See: winter moth)
Elm leaf beetle *Pyrrhalta luteola* Müller	New Brunswick	Numbers of beetles were very low and feeding restricted to a few trees at Fredericton, where severe browning of foliage occurred in 1978 and the infestation was expected to continue in 1979; generally light foliage browning with a few trees moderate, in the St. Stephen-Milltown area of Charlotte Co. No extensive damage is expected in 1980.
Eastern tent caterpillar *Malacosoma americanum* (Fabricius)	New Brunswick Nova Scotia	Nests were common on pin cherry bushes in the Salisbury area and numerous on apple trees at Moncton, Westmorland Co; on roadside bushes at Baillie and St. Stephen, Charlotte Co, common on shrubs and bushes in the Debec, Richmond Corner area of Carleton Co, in New Brunswick; nests were present on apple trees at scattered locations in Colchester and Antigonish Co in Nova Scotia.
Fall cankerworm *Alsophila pometaria* (Harris)	Region	Moderate defoliation of a few wild apple trees in Nova Scotia at Northeast Margaree, Inverness Co, Middle Cape, Big Pond and Big Pond Centre, Cape Breton Co, and Ingonish Beach, Victoria Co; light defoliation of basswood and Manitoba maple at Charlottetown and Bunbury, Queens Co, P.E.I., and of elm and a few oak at Fredericton, N.B.
Fall webworm *Hyphantria cunea* (Drury)	Region	Nests were too numerous to count in a small patch (0.25 ha) of alder, apple, raspberry and poplar at New Annan, Prince Co, P.E.I. and were common elsewhere in the Province as well as in Nova Scotia, where they averaged 0.8 nests/km in the East Chester-Gold River-Mahone Bay area of Lunenburg Co. A few isolated nests were observed in southern New Brunswick.

DECIDUOUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Ink spot of aspen *Ciborinia whetzelii* (Seaver) Seaver	Nova Scotia New Brunswick	Patches of trembling aspen with moderate or severe browning in Cumberland Co, N.S.; in Restigouche, Northumberland and York Co in New Brunswick. Largetooth aspen infected near Catamaran Brook, Northumberland Co, N.B.
Large aspen tortrix *Choristoneura conflictana* (Walker)	Prince Edward Island	Light and moderate leaf rolling of trembling aspen over a 5.2-km^2 area south of Cascumpec, Prince Co, and over a few hectares west of Springfield, Queens Co, and between Murray River and Montague, Kings Co.
Leaf blotch of horse-chestnut *Guignardia aesculi* (Pk.) V.B. Stew.	Region	Foliage browning common throughout the range of the host. Discoloration severe at Granville, Granville Centre, Annapolis Co., South Brookfield, Queens Co, South Ohio and Central Argyle, Yarmouth Co, Baddeck, Victoria Co., Pictou, Pictou Co., in Nova Scotia and at Wilson's Beach, Charlotte Co, N.B.; and moderate on scattered ornamentals at Richardsonville and St. Andrews, Charlotte Co, and at Westfield, Kings Co, N.B.
Leaf spot of aspen *Drepanopeziza tremulae* Rimpan	New Brunswick Nova Scotia	Leaf spotting severe on trembling aspen in the Stanley area, at Middle Southampton and near McAdam, in York Co and at Basswood Ridge, Charlotte Co; moderate from Oromocto to Welsford in Sunbury and Queens Co, between Hamsville and Rogersville in Kent Co, at Otnabog, Queens Co, from Salisbury to Elgin in Westmorland and Albert Co; in Nova Scotia browning was common but light throughout the Annapolis Valley.
Leaf spot of maple *Phyllosticta minima* (Berk. & Curt.) Underw. & Earle	New Brunswick	Severe maple foliage discoloration from Upper Cambridge to Wickham, Queens Co, McAdam, York Co, and Theriault, Gloucester Co. Injury was negligible in maple stands used for syrup production in the Riceville area of Madawaska Co where severe browning occurred in 1978.

Organism	Locality	Remarks
Leaf and twig blight of poplar *Venturia macularis* (Fr.) E. Muell & Ary	Region	In New Brunswick, the blight was common and widespread, on trembling aspen (tA) and, to a lesser extent, largetooth aspen (lA). Severe infections occurred at Allandale (tA, lA), at York Mills (ta), Christie Ridge (ta) and Skiff Lake (ta), York Co, and on ornamental poplars at Plaster Rock, Victoria Co; moderate at Glassville (tA) and Golden Ridge (tA), Carleton Co, and at Otnabog (lA), Queens Co. In Nova Scotia, the blight was light on trembling aspen regeneration in Pictou and Colchester Co. In Prince Edward Island, discoloration was moderate at Pisquid, Queens Co. The disease was not found at Sutherland, Pictou Co, N.S. or Milltown Cross, Kings Co, P.E.I. where moderate or severe discoloration occurred in 1978.
Obliquebanded leafroller *Choristoneura rosaceana* (Harris)	Region	Few larvae at 51 locations in 13 of 15 counties in New Brunswick in collections from 9 deciduous hosts, mostly sugar and red maple; also low at Pictou, Pictou Co and Southampton, Cumberland Co, N.S. and Charlottetown, P.E.I. Light-trap catches indicate that this species will be somewhat more abundant next season particularly in parts of Northumberland and Victoria Co in New Brunswick and Victoria Co in Nova Scotia.
Poplar leafmining sawfly *Messa populifoliella* (Townsend)	New Brunswick	Severe leaf mining of poplars at Woodstock, Nackawic, and Fredericton, moderate on balsam poplar at Massabiella and east Bathurst, Gloucester Co, Busby, Northumberland Co, on a few trembling aspen trees at Richmond Corner, Carleton Co, and on scattered aspen from Hartland, Carleton Co through Becaguimec to Millville, York Co and at Oromocto.

DECIDUOUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Poplar serpentine leafminer *Phyllocnistis populiella* (Chamb.)	Region	Severe leaf mining of trembling aspen over about 300 ha at Robinsonville, Restigouche Co, also at Sunnyside and Little Sevogle River, Northumberland Co. Leaf mining moderate from Chipman to Harcourt in Queens and Kent Co, from Millerton to Red Bank and at Holtville, Northumberland Co and southwest of Geary, Sunbury Co. Present at scattered locations in Nova Scotia and in Prince Edward Island.
Saddled prominent *Heterocampa guttivitta* (Walker)	New Brunswick	Beech mortality increased to 83% of the merchantable volume in Gloucester Co and to 62% in southwestern York and Carleton Co as a result of a severe outbreak in 1976 on trees weakened by beech bark disease. Corresponding figures in 1978 were 81 and 48%, respectively. Some of the other hardwood trees in these areas also declined but most trees have at least 50% of their crowns living and are in as good or better condition as in 1978. Little further tree mortality is expected in 1980.
Spring cankerworm *Paleacrita vernata* (Peck)	Nova Scotia	Severe defoliation of unsprayed apple trees at Falmouth and moderate defoliation of elm at Newport Corner and Windsor, Hants Co.
Uglynest caterpillar *Archips cerasivoranus* (Fitch)	Nova Scotia Prince Edward Island	In 1977, nests were numerous on roadside trees and bushes in central Nova Scotia, in 1978 populations decreased dramatically and only a few scattered nests were found in 1979; only a few nests were observed in Prince Edward Island.

DECIDUOUS FOREST PESTS OF LESSER IMPORTANCE

Organism	Locality	Remarks
Winter moth *Operophtera brumata* (Linnaeus) and Bruce spanworm *Operophtera bruceata* (Hulst)	Nova Scotia Prince Edward Island	In Nova Scotia, defoliation of hardwoods by a combination of winter moth and bruce spanworm was severe on a few hectares at Abercrombie, Pictou Co, moderate on apple and elm at Southampton, Cumberland Co and larvae were collected on white birch at McLellan Brook, Pictou Co; winter moth alone caused severe defoliation on apple at Marydale, Antigonish Co, Woodside, Kings Co, moderate at Falmouth, Hants Co and Scotsburn, Pictou Co. Also found on white birch at McLellan Brook, Pictou Co. In Prince Edward Island, severe defoliation by mixed populations on wild apples at Hampshire, Queens Co, moderate on a few basswood at Canavoy, Kings Co, and at Charlottetown.
Willow flea weevil *Rhynchaenus rufipes* (LeConte)	Region	Severe browning of the foliage of ornamental and wild willows in many areas of southern New Brunswick, in the eastern half of the mainland and in Colchester Co in Nova Scotia, and in the eastern half of Prince Edward Island.