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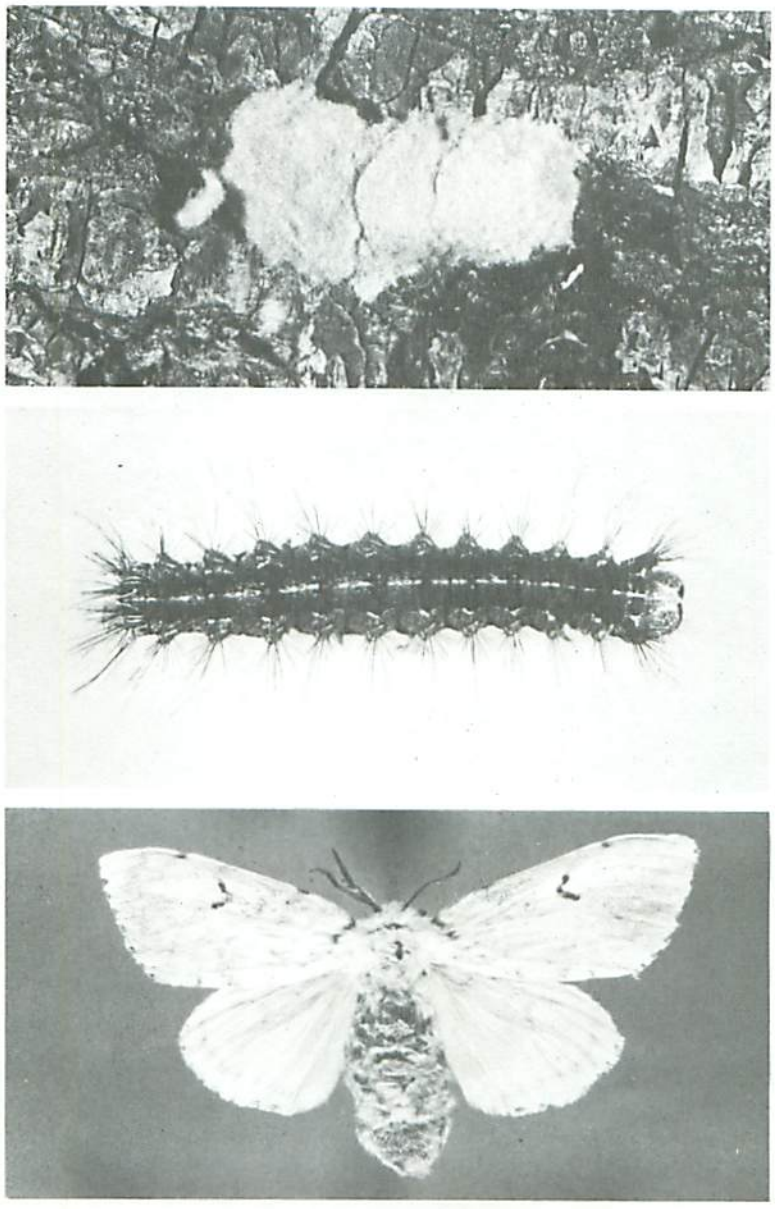
SURVEY BULLETIN

Forest Insect and Disease Conditions in Ontario

Summer 1981



The gypsy moth, *Lymantria dispar* L., is a relatively new forestry problem in southeastern Ontario. *Top*, egg mass; *centre*, gypsy moth larva; and *bottom*, the female moth.

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Forest Insect and Disease Conditions in Ontario

Summer 1981

This is the second of three bulletins to be issued by the Forest Insect and Disease Survey Unit describing forest pest conditions surveyed during the 1981 field season.

FOREST INSECTS

Spruce budworm, *Choristoneura fumiferana* (Clem.)

The gross area of forest infested by the spruce budworm in Ontario declined in 1981 (Fig. 1). A total of some 18 216 679 ha was infested this year in comparison with 18 850 294 ha in 1980. Aerial and ground surveys conducted by Forest Insect and Disease Survey (FIDS) field technicians showed that infestations have declined in the three main geographical areas of the province where budworm outbreaks are present (Table 1).

In general, larval populations were much lower than in previous years. Reduced populations in the order of 40-50% were forecast by the 1980 egg-mass survey and reported in the Fall 1980 issue of the Survey Bulletin.

Table 1. Spruce budworm infestations in Ontario, 1980-1981

Outbreak region of Ontario	Gross area defoliated ('000 000 ha)		
	1980	1981	Change
Northwestern	.724	.658	-.066
Northeastern	17.119	16.958	-.161
Southern	1.007	.601	-.406
Total	18.850	18.217	-.633

Aerial surveys, with flying time provided by the Ontario Ministry of Natural Resources (OMNR), are carried out from early to mid-July when the color of budworm-damaged foliage is at its peak. The data presented in this Bulletin are derived from maps and reports prepared on the basis of these surveys and are subject to revision.

In Ontario, the spruce budworm feeds on balsam fir, white spruce, and black spruce growing on upland sites in mixed stands. The following data on area infested represent gross estimates of the area within which stands containing these host species suffered moderate-to-severe defoliation.

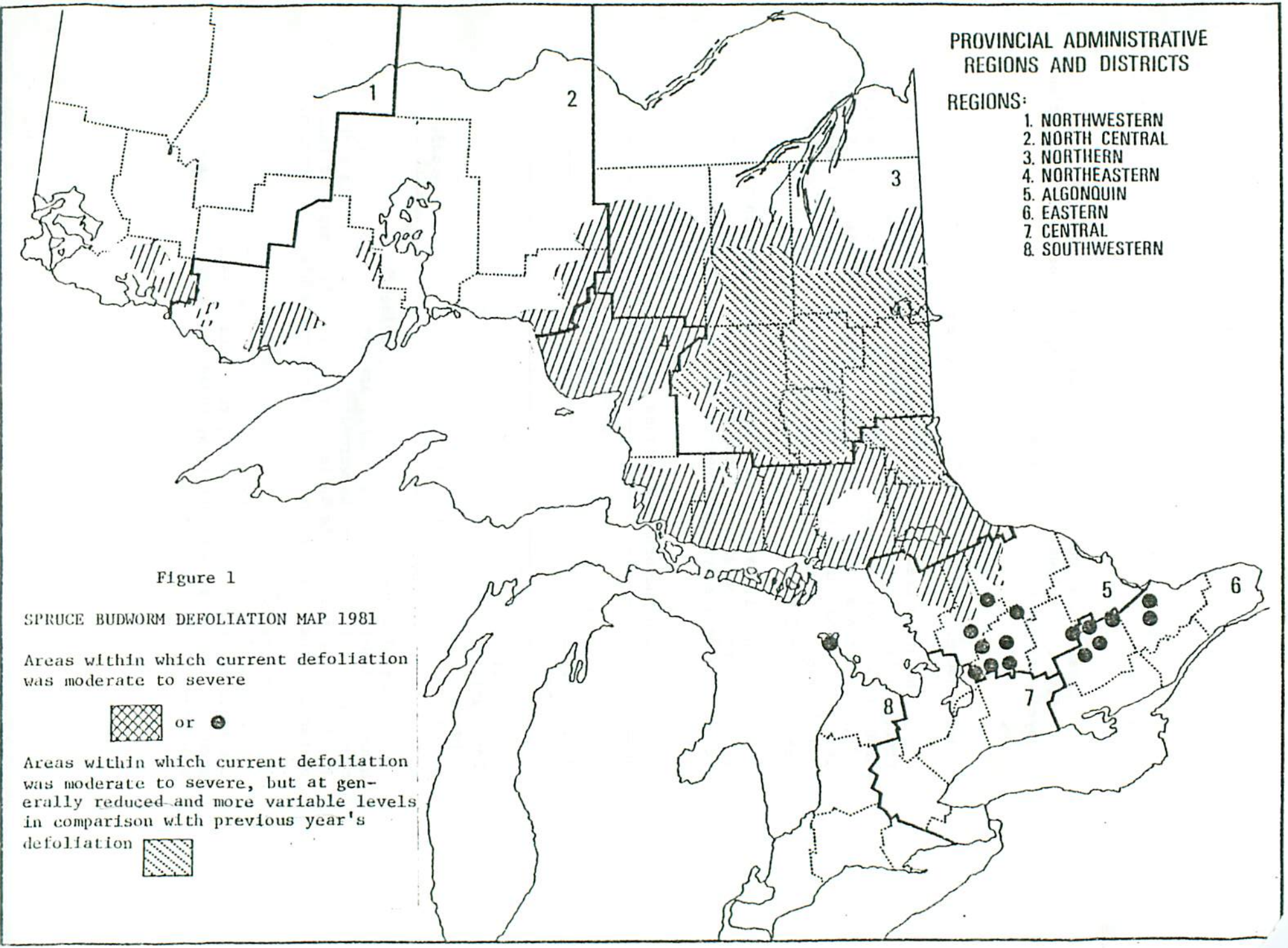

Figure 1

SPRUCE BUDWORM DEFOLIATION MAP 1981

Areas within which current defoliation was moderate to severe

or

Areas within which current defoliation was moderate to severe, but at generally reduced and more variable levels in comparison with previous year's defoliation

In northwestern Ontario, the total area suffering moderate-to-severe defoliation decreased by some 66 765 ha. The bulk of this decrease occurred around the outer edges of the infestation between Kawnipi Lake in the Atikokan District and Lower Shebandowan Lake in the Thunder Bay District. Moderate-to-severe defoliation declined in this area by approximately 41 500 ha. A similar decline occurred in the infestation located mainly in the Fort Frances District between Bennett Township and Lower Manitou Lake. Here, a number of boundary changes are evident, with a net decrease of 10 000 ha. The smaller infestations near Wolseley Lake in the Atikokan District and in the Arrow Lake-Sandstone Lake area of the Thunder Bay District also declined appreciably in size. The infestation which was discovered in the Poshkokagan Lake area of Thunder Bay District in 1980 decreased by about 2 400 ha. This infestation extends to the northwest to the vicinity of Cheeseman and Geikie lakes and southeast into the Nipigon District between Disraeli and Leckie lakes. A small infestation found in 1980 at Umfreville Lake, Kenora District, increased in size as defoliation was mapped on the south side of the lake for the first time.

In the northeastern Ontario outbreak, a substantial increase occurred in the eastern Terrace Bay District where pockets of moderate-to-severe damage in the Manitouwadge and Davies townships area coalesced and merged with the main body of infestation to the east. In the southeast Terrace Bay District the infestation spread west to Coldwell Township and scattered pockets of moderate-to-severe damage occurred along the north shore of Lake Superior to Priske Township. These increases were more than offset by declines which occurred in a large area encompassing part of the southern Wawa, southeastern Chapleau, and northern Sault Ste. Marie and Blind River districts where stands were generally free of moderate-to-severe defoliation. Changes in the northern boundary of the infestation resulted in a net decline in area infested in the Kapuskasing district and increases in the Cochrane and Hearst districts. Moderate-to-severe defoliation was again mapped along the Albany, Moose and Harricanaw River system as far north as James Bay in the Moosonee District. Damage in the remainder of the northeastern outbreak was moderate to severe but a large area in the central portion was much more variable than in recent years. This area encompassed the southern parts of the Cochrane and Kapuskasing districts, virtually all of the Timmins, Kirkland Lake, Gogama and Temagami districts, a large portion of the Chapleau District and small areas in the Sudbury and North Bay districts (Fig. 1). Within this area of more than 7 million ha, defoliation is extremely variable, with ground estimates ranging from a low of 5% to a high of 80% and averaging 27% less than those in surrounding areas of more consistent moderate-to-severe defoliation. The situation is further complicated by large patches of dead and dying balsam fir which make defoliation mapping extremely difficult. This is the same part of the province in which cold damage occurred in June, 1980 and caused varying degrees of spruce budworm larval mortality (see

Summer 1980 Survey Bulletin). Over all, areas of moderate-to-severe damage decreased by approximately 161 000 ha in northeastern Ontario in 1981.

This year the largest decrease in budworm-infested forest occurred in southern Ontario (Fig. 1). The most spectacular reduction occurred in the large infestation which was located in the Bancroft, Pembroke and northern Tweed districts. This infestation was reduced by over 190 000 ha or 98% and only a few scattered pockets of moderate-to-severe defoliation persist in the northern Tweed and southeastern Bancroft districts. Infestations in the northern Algonquin Park and southern Lindsay districts were reduced by 36 and 92%, respectively, or a total of 85 000 ha. A substantial decline was also reported in the infestation which occurred in the Bruce Peninsula, Owen Sound District. Small increases in area infested were mapped in the Parry Sound and Bracebridge districts.

In an effort to protect high-value stands, OMNR carried out an aerial spraying program at a number of locations in the Parry Sound, Gogama, Kapuskasing, Hearst, Temagami, Kirkland Lake and Chapleau districts. Approximately 9 557 ha of high-value spruce-fir forests and plantations were treated with a variety of insecticides including Matacil (3 234 ha), Dipel 88 (3 088 ha), Thuricide 16 B and 32 B (3 127 ha) and virus (108 ha). Budworm development was slightly ahead of normal in these areas in 1981. Spraying began on May 20 and was completed in late June.

Spruce budworm egg surveys, and budworm-caused mortality surveys, are now under way and the results of this work will be reported in the Fall 1981 issue of the Survey Bulletin.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Infestations of this pest in the Sudbury, Espanola and North Bay districts of the Northeastern Region virtually collapsed in 1981. Small pockets of moderate-to-severe defoliation persisted in the area north and west of Espanola in the Espanola District, as did similar small infestations in Denison and Drury townships and near Warren in Jennings, Dunnet and Casimir townships, Sudbury District. Areas of light infestation were also reported from McKim Township, Sudbury District and in the vicinity of North Bay in the North Bay District.

In the Northern Region, similar population declines were attributed to egg hatch failure. The Kap-Kig-Iwan infestation in Kirkland Lake District, which encompassed parts of four townships in 1980, was reduced to a small area in central Dack Township in 1981. The infestation in Cochrane District also decreased in size although parts of Clute, Fournier, Glackmeyer, Blount and Leith townships remain moderately to severely infested. A few small patches of

defoliation also persisted west of Smooth Rock Falls in the Kapuskasing District.

The infestation in the Thunder Bay District of the North Central Region expanded to encompass about 650 km^2 west and southwest of the city of Thunder Bay. Medium infestations which occurred west of Fort Frances in the Northwestern Region in 1980 disappeared completely this year.

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

In the Huronia District, Central Region, where populations have been high for several years, infestations were generally light, although aerial surveys revealed persistent pockets of severe defoliation in several townships inland from Georgian Bay, and on Beausoleil Island in the Georgian Bay Islands National Park. In all areas in the Central Region which were aerially sprayed in 1980 only very low populations were observed. However, the Dufferin County Forest which was treated in 1979 became re-infested, with about half the oak stands suffering up to 70% defoliation. Population declines were also reported in the Niagara and Maple districts, Central Region, and in the Tweed and Carleton Place districts, Eastern Region, although a single medium infestation of about 9 km^2 persisted in Lavant Township, Carleton Place District. Generally, light and occasionally medium infestations were encountered in the Southwestern and Algonquin regions. Populations remained high in several areas in the Blind River and Sault Ste. Marie districts, and increased numbers were reported from Manitoulin Island and the Sudbury District in the Northeastern Region.

Cedar Leafminers, *Argyresthia aureoargentella* Brower, *A. canadensis* Free., *A. thuiella* Pack. and *Pulicalvaria thujaella* Kft.

Populations of this leafminer complex, which infested most stands in southern Ontario in 1980, declined considerably in 1981 (Fig. 2). This was particularly evident in the Eastern and Algonquin regions where infestations virtually collapsed. Medium-to-heavy infestations persist, however, in much of the Central Region and the Southwestern Region south of Owen Sound District. In Owen Sound District the main body of infestation broke up into scattered pockets in the Bruce Peninsula and a narrow band of medium-to-heavy infestations in the Maxville-Kincardine area. Repeated defoliation has resulted in scattered light mortality at a number of locations in the Owen Sound, Huronia and Lindsay districts.

Gypsy Moth, *Lymantria dispar* (L.)

This introduced defoliator has been present in the Eastern Region for a number of years, but until now, infestations have been generally light. This year, pockets of infestation ranging from light to heavy were found in a continuous band north of the St. Lawrence

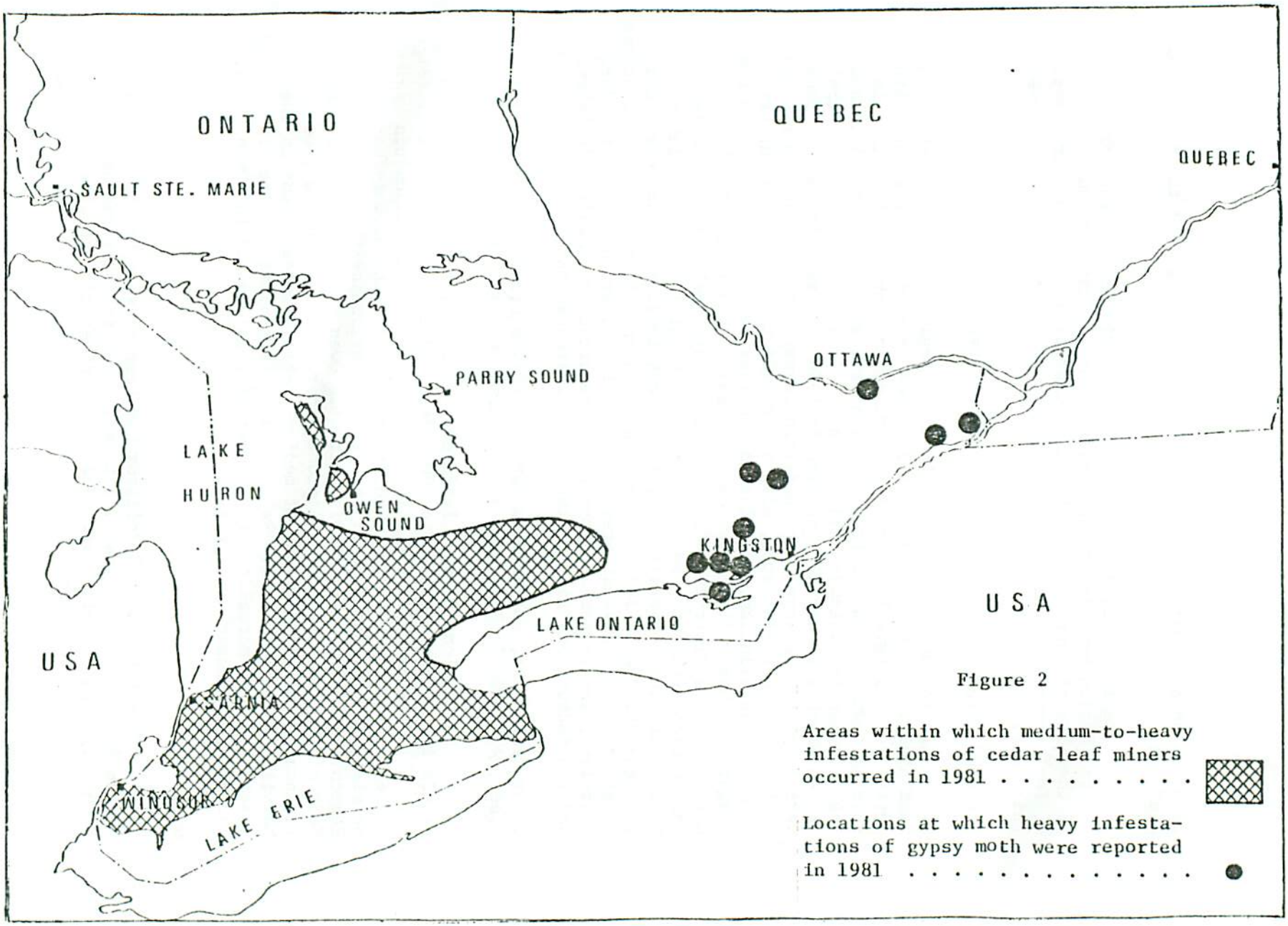

Figure 2

Areas within which medium-to-heavy infestations of cedar leaf miners occurred in 1981 . . . . . .

Locations at which heavy infestations of gypsy moth were reported in 1981 . . . . . .

River from the Quebec border to Prince Edward County in the Cornwall, Brockville and Napanee districts (Fig. 2). The most severe damage, however, was recorded in the Kaladar area of Tweed District where approximately 14.5 km^2 of mixed hardwoods and white pine were almost completely defoliated. An additional 7.5 km^2 in the same area were lightly defoliated. Heavy infestations were also reported in the city of Ottawa.

Pine False Webworm, *Acantholyda erythrocephala* (Linn.)

Thus far, surveys in 1981 indicate very little change in the distribution of this introduced insect and, in general, populations are lower than in previous years. The most serious damage continues to be centred in the Huronia District, Central Region where a number of plantations in five townships were seriously defoliated. High populations were also reported from one location in the Cambridge District and from several locations in the Carleton Place and Brockville districts. Elsewhere, light-to-moderate infestations occurred in the eastern Owen Sound District, Southwestern Region, in the Maple and Lindsay districts, Central Region, and in the Minden and Bancroft districts, Algonquin Region.

Jack Pine Sawfly, *Neodiprion pratti paradoxicus* Ross

Localized heavy infestations occurred in jack pine plantations in the Brockville and Carleton Place districts, Eastern Region, and in the Minden District, Algonquin Region. Substantial population reductions were reported from a number of locations in the Parry Sound, Pembroke and Algonquin Park districts. Light-to-medium infestations of the closely related sawfly, *Neodiprion pratti banksianae* Roh., were reported from several areas in the Maple, Huronia and Cambridge districts, Central Region.

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

Surveys for this insect which are still under way show that medium-to-heavy infestations have recurred at a number of locations in the Dryden, Fort Frances and Kenora districts, Northwestern Region. Generally light infestations are reported from the Sioux Lookout, Timmins, Kirkland Lake, and Temagami districts.

Aspen Defoliators, *Pseudexentera oregonana* Wlsh., *Choristoneura conflictana* Wlk., and *Choristoneura rosaceana* Harr.

Increased heavy infestations were reported in six townships in the Huronia District and at two locations in the Maple District, Central Region. Populations declined to generally low levels in the Kirkland Lake, Sudbury, Chapleau and Gogama districts.

Larch Casebearer, *Coleophora laricella* Hbn.

In southern Ontario, populations which have been on the upswing for several years declined to generally low levels. Moderate-to-severe browning of European and native larch foliage persisted in a number of locations in the Cambridge and Huronia districts, Central Region and at several locations in the Aylmer District, Southwestern Region. Infestations in Perry and Stisted townships, Algonquin Region, which have caused light mortality of mature trees, collapsed in 1981. In northern Ontario, medium-to-heavy infestations at Garden River, Sault Ste. Marie District and in Ashmore and Oakes townships, Geraldton District declined to very low levels. Reports of small numbers of larvae were received from Fort Frances, Hearst, Kapuskasing, Cochrane, Gogama and Chapleau districts.

Fall Cankerworm, *Alsophila pometaria* (Harr.)

Heavy infestations were reported from the Northwestern and Central regions. In the Central Region severe defoliation occurred in mixed hardwood woodlots in Lincoln Township and on ornamental hardwoods in the municipalities of Niagara Falls, Fonthill, Welland, and Thorold in Niagara District. Light infestations recurred near Brantford in Cambridge District. In the Northwestern Region, heavy infestations were evident in the town of Fort Frances and its environs in Fort Frances District and light defoliation was observed on ornamentals in the town of Dryden, Dryden District.

Balsam Fir Sawfly, *Neodiprion abietis* complex

Reports from a number of areas in Ontario indicate that, with a few exceptions, populations of this sawfly are on the decline. Small, discrete, medium-to-heavy infestations were noted in Keppell Township, Owen Sound District, in Medonte Township, Huronia District, in Kohler Township, Hearst District and on Anderson Island at the mouth of the Albany River in Moosonee District. Elsewhere populations were low and damage was negligible.

European Pine Sawfly, *Neodiprion sertifer* Geoff.

Small population increases were reported in the Central and Southwestern regions for the second consecutive year although defoliation in most instances remained light. Small, medium-to-heavy infestations in Guelph Township, Cambridge District and in Haldimand Township, Lindsay District required control measures. Declining populations were reported from all areas in the Algonquin Region and from Espanola and Sault Ste. Marie districts in the Northeastern Region.

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

Although feeding damage was widespread in northern Ontario, the only severe defoliation reported was on aspen reproduction in Arnott and Leitch Townships in the Hearst and Cochrane districts, respectively, and in Floranna and Ivanhoe townships in the Chapleau District, Northern Region. Elsewhere only low numbers were encountered.

Spruce Bud Moth, *Zeiraphera canadensis* Mut. & Free.

In the Southwestern Region, heavy infestations destroyed up to 60% of the new foliage of white and Norway spruce seed trees at the St. Williams Forest Station in South Walsingham Township, Simcoe District. Chemical control operations were attempted at this location with inconclusive results. Numerous other heavy infestations occurred in the Simcoe District and in Minto, Colbourne and Downie townships in the Wingham District. Heavy infestations which occurred in 1980 in the Thunder Bay, Nipigon, and Terrace Bay districts of the North Central Region declined to generally low levels although small numbers of infested buds were still common. Similar widespread, low populations were also reported from a number of locations in the Fort Frances, Kenora and Sioux Lookout districts, Northwestern Region and the Niagara District, Central Region.

European Pine Shoot Moth, *Rhyacionia buoliana* Schiff.

Continued heavy damage was reported on red pine plantations in Dunwich and Osprey townships, Southwestern Region and from near Kitchener in the Cambridge District, Central Region. Light infestations also occurred in Woolwich, Wilmot, and Puslinch townships, Cambridge District. The insect was not reported elsewhere in the province.

Red Pine Sawfly, *Neodiprion nanulus nanulus* Schedl.

Medium infestations of this insect in the Algonquin Park and Pembroke districts, Algonquin Region declined to low levels in 1981. Reports of low populations were also received from the Carleton Place, Bancroft, Chapleau, Gogama, Fort Frances and Kenora districts.

Birch Leaf Miner, *Fenusa pusilla* (Lep.)

High populations of this insect were again evident throughout southern Ontario. Numerous heavy infestations were reported on birch in both urban and forest situations in the Southwestern, Central and Algonquin regions and in the central part of the Eastern Region. In the Northern Region, heavy infestations were common in the Kirkland Lake, Timmins, Chapleau, Kapuskasing, Hearst and Cochrane districts, while populations increased to the medium level at a number of locations in the Gogama District. High numbers occurred on ornamentals in the city of Thunder Bay, North Central Region. Reports of light-to-medium infestations were received from a number of other locations in the province.

Other Insects of Note

Low populations of the jack pine budworm, *Choristoneura pinus pinus* Free., have been reported from Kirkwood Township, Blind River District and from Scots pine Christmas tree plantations in Oro Township, Huronia District. Small numbers of larvae were also noted in Maryborough Township, Cambridge District and Glenelg Township, Owen Sound District.

Medium-to-heavy infestations of the pine spittlebug, *Aphrophora cribrata* Wlk., were noted in numerous pine plantations in the Lindsay District, Central Region and at two locations on Manitoulin Island in the Espanola District, Northeastern Region.

Light infestations of the black headed budworm, *Acleris variana* Fern., were reported from white spruce at a number of widely scattered locations in the Central and Southwestern regions.

A complex of leaf rollers including *Argyrotaenia quercifoliana* Fitch. and *Pseudexentera cressoniana* Clem. caused heavy defoliation of white oak in Brantford and Beverley townships, Cambridge District. Infestations which were heavy in 1980 in the Honey Harbour-Six Mile Lake area of Huronia District declined to very low levels this year.

An aerial survey in the Cairns Lake area of Red Lake District in the Northwestern Region revealed heavy mortality of white birch where high populations of the bronze birch borer, *Agrilus anxius* Gory, were reported in 1980.

Following several years of heavy infestations, populations of the aspen casebearer, *Coleophora pruniella* Clem., declined to generally low levels in the Huronia District, Central Region. Medium-to-heavy infestations persisted, however, on balsam poplar in Melancthon Township, Huronia District and in Wilmott Township, Cambridge District. A single heavy infestation was reported on 12-m white birch trees in Hamilton Township, Lindsay District.

Surveys of feeding damage by adult sawyer beetles, *Monochamus* spp., are still in progress but preliminary reports indicate that high populations are again present at a number of locations in Timmins, Temagami, Kirkland Lake and Chapleau districts, Northern Region. Early reports from the Northwestern Region indicate that little current damage is yet apparent in areas in the Ignace and Sioux Lookout districts which were heavily infested last year.

The pine bark aphid, *Pineus* sp., was found infesting two compartments of rising 2-0 white pine seedlings at the G. Howard Ferguson Forest Station in Brockville District. Subsequent control operations using malathion as a fumigant in two applications 10 days apart were very effective. The aphid was also reported causing light damage to a

5-year-old white pine plantation in Marlborough Township, Carleton Place District.

Recently, very heavy moth flights of the black looper, *Rheumapera* sp. (probably *hastata*), were observed in the vicinity of the town of Chapleau, Chapleau District. This insect is primarily a pest of white birch, and future surveys will determine the effects.

Infestations of the pine tortoise scale, *Toumeyella parvicornis* (Chll.), caused light mortality of 2-m jack pine trees in Blair Township, Parry Sound District. Light branch mortality was reported on jack pine trees in Vrooman Township, Gogama District and in Foleyet and Wakami townships, Chapleau District.

The poplar gall mite, *Eriophes* sp., causes the foliage of trembling aspen to form dark shrunken galls on infested trees. Heavy infestations were reported from several locations in the Kirkland Lake District and from Arnott and Colquhoun townships in the Hearst and Cochrane districts, respectively. Light infestations were common in much of the remainder of the Northern Region.

Light infestations of the basswood looper, *Erannis tiliaria* Hark., were reported from a number of locations in the Niagara District, Central Region.

TREE DISEASES

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

Surveys were again carried out to ascertain whether or not the European race of this conifer disease occurs in southern Ontario. Aerial surveys and ground checks at numerous locations again failed to detect the presence of this pathogen. Particular emphasis was placed on detection surveys in the Eastern Region which is closest to known infection centres in New York state. In addition to the regular FIDS survey, OMNR in Cornwall District undertook a contract survey in which university students attempted to examine all planted pine between Highway 43 and the St. Lawrence River. Suspect material was collected and sent to the FIDS Unit at the Great Lakes Forest Research Centre for identification. Some 40 samples were received and although some material is still in culture the fungus has not been recovered to date.

The North American race of Scleroderris canker has been present in Ontario for a number of years. Infections were reported from several locations in northern Ontario, and although incidence was sometimes as high as 100%, trees severely damaged did not exceed 5%. In Melancthon Township, Huronia District, where the North American race was discovered in 1980, surveys failed to detect its presence following sanitation measures.

Globose Gall Rust, *Endocronartium harknessii* (J.P. Moore) Y. Hirat.

This disease was sampled extensively in the Northwestern Region. The most severe damage occurred in Aubrey Township, Dryden District and Isley Township, Sioux Lookout District where 19 and 17%, respectively, of the trees examined were severely damaged. It was also reported from the North Central and Northeastern regions, where damage was generally low except in Jocelyn Township, Sault Ste. Marie District where severe damage to 7% of the trees examined was recorded.

Brown Spot Needle Blight of Pines, *Scirrhia acicola* (Dearn)

As reported in the Spring 1981 Survey Bulletin, this disease was first found in Ontario in the fall of 1980 near Sauble Falls in the Owen Sound District, Southwestern Region. Subsequent surveys in this area have shown that the disease is confined mainly to ornamental mugho and Austrian pine at the entrance to Sauble Falls Provincial Park, where control measures are now under way. A single additional infection centre has been found near Perkinsfield in the Huronia District, Central Region where there are light infections in a small Austrian pine plantation. To date, these are the only known occurrences in the province. Detection surveys are continuing.

Pine needle rust, *Coleosporium asterum* (Diet.) Syd., was reported from red pine and jack pine plantations at numerous locations in the province. The only serious occurrence was in the Northern Region, where heavy infections caused lower branch mortality in young jack pine plantations in Arnott Township, Hearst District. Elsewhere defoliation did not exceed 15%.

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

There has been little change in the status of this root rot in Ontario for a number of years. In 1981 the disease was reported at varying infection levels throughout the province, with the most severe damage occurring in a plantation in Parkinson Township, Blind River District where 17% of young red pine trees were killed.

A Needle Cast of Pine, *Davisomycella ampla* (J. J. Davis) Darker

Infections caused by this needle cast were widespread in several districts in the Northern and North Central regions. However, evaluations of the disease at a number of locations showed that although up to 100% of the trees examined were infected, foliage damage was usually less than 10%.

Maple Problems

Widespread deterioration, including the death of some ornamental and roadside sugar maple, was reported from the Eastern and Southwestern regions. The most serious damage has occurred in the Oxford Mills-Charleston Lake area of the Brockville District and in the Kingston-Belleville area (including Prince Edward County) of the southern Napanee District, Eastern Region. Sporadic dieback of maple has occurred throughout the Southwestern Region, with the most serious damage reported from an area west of London, where maple, hickory and oak growing in woodlots show dieback symptoms.

Mortality of ornamental sugar maple is also widespread in the city of North Bay, Northeastern Region. FIDS staff have received numerous inquiries from concerned landowners, Conservation Authorities and forest managers. No specific agent is known to cause the condition, but a number of factors appear to be contributing to it.

The problems outlined above appear different from those associated with maple decline, a condition that followed the 1974-1977 outbreak of forest tent caterpillar in the Southwestern and Algonquin regions. With maple decline the recovery of tree crowns, which began in 1979, continued through 1981. Most trees that survived now appear healthy.

Salt Damage

This perennial problem was again reported along major traffic routes in a number of areas in Ontario. Reports of widespread damage were received from the Algonquin, Central and Southwestern regions. Particularly severe damage occurred along Highways 401, 7, and 10 in the Southwestern Region.

Storm Damage

Considerable top breakage and tree mortality resulting from a winter storm are reported in the northern Kirkland Lake District, Northern Region. Jack pine is the species most affected, with up to 38% of the trees in a number of stands in Michaud, McCool and Black townships suffering severe damage.

Winter Drying

This condition is caused by warm sunny weather in early spring, which dehydrates the foliage of various coniferous species at a time when the roots are still frozen and unable to replace the lost moisture. Reports of winter drying were received from the Algonquin, Central, Southwestern and Northern regions. The worst damage was reported from a 6 ha red pine plantation in McMurrich Township, Parry Sound District where 25% of the trees were severely damaged. Elsewhere, severe damage was usually less than 10% and in most cases the trees have recovered.

Other Diseases of Note

Damping-off fungi, including *Fusarium* sp., caused losses of up to 10% among white pine, white spruce and eastern white cedar seedlings at the G. Howard Ferguson Forest Station in the Brockville District, Eastern Region. Subsequent treatment with the fungicide Captan provided good control.

Red band needle blight, *Dothistroma pini* Hulbury, caused severe defoliation of planted Austrian pine in Glenelg Township, Owen Sound District and near Orr Lake, in Medonte Township, Huronia District.

Rhizina root disease, *Rhizina undulata* Fr., continued to cause mortality of planted white pine seedlings at one location in the Simcoe County Forest, Huronia District.

A needle cast of pine, *Lophodermium pinastri* (Shrad. ex Hook), caused light damage to planted jack pine in Pic Township, Terrace Bay District and to red pine plantations in Gurd Township, North Bay District.

Cytospora canker, *Cytospora chrysosperma* (Pers.) Fr. and *Cytospora nivea* (Haffm.) Fr., caused light damage to hybrid poplar plantations in Roxborough and Charlottenburgh townships, Cornwall District.

Stem girdling caused by rodent feeding caused 29% mortality of jack pine trees in a plantation in Harker Township, Kirkland Lake District. Somewhat lighter damage was reported on small trees in Dalmas Township, Chapleau District and near Normandale, Simcoe District.

Ash dieback caused extensive losses of woodlot trees near Killworth and London in the Aylmer District and near Sarnia in the Chatham District. Mortality of roadside and hedgerow ash was reported from a number of other widely separated locations in southern Ontario.

Unusual weather conditions during the past winter are thought to be the cause of extensive damage to both conifer and hardwood trees throughout the Eastern Region. Most tree species suffered some damage but hybrid poplar outplantings were hardest hit with mortality and branch killing in evidence.

Reports of light frost damage were received from a number of widely scattered locations across Ontario. The most severe damage reported was in Caradoc Township, Aylmer District where 20% of the new foliage in a white spruce plantation was damaged. Elsewhere damage to new growth was usually less than 10%.

Survey Technician Has Close Call

While conducting spruce budworm aerial defoliation surveys in the Chapleau District on 19 July, FIDS technician Dave Constable received the scare of his life when the engine in the Otter aircraft failed. Quick action and the cool head of pilot Peter Crosby of South Porcupine in landing the disabled aircraft on nearby Zeph Lake averted a potentially serious accident. This is perhaps a good time to state that, since 1946, technicians of the Forest Insect and Disease Survey Unit have flown hundreds of thousands of safe air miles with the Provincial Air Service. The reliable service provided by the PAS, and the excellent relationship among its pilots, engineers and other officials and FIDS field technicians have contributed in no small measure to the success of the Unit over the years.

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