

# Status of Insects in the White River District

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Information Report O-X-18  
(Forest Research Laboratory, Ontario Region)

## FOREWORD

J. E. MacDonald

Outbreaks of the forest tent caterpillar have highlighted reports dealing with forest insect surveys for the past several years. In 1965, the outbreak in Western Ontario reached its peak and poplar stands within an area of about 34,000 square miles were severely defoliated. Egg surveys in the fall revealed that a marked decline in infestation intensity will occur in Sioux Lookout and Kenora districts but high larval populations will persist in Fort Frances and Port Arthur districts in 1966. Trends in infestation intensities will vary from area to area in eastern Ontario, with the most noteworthy increase in the extent of infestations occurring in the Lake Nipissing outbreak.

The development of new infestations of Bruce spanworm and the European pine sawfly were of particular interest in 1965. Infestations of the former occurred in Sault Ste. Marie, Sudbury and Pembroke districts. Severe defoliation of hardwoods that resulted in relatively large areas represented first records of extensive infestations in Ontario. A major extension in the known distribution of the European pine sawfly was recorded when the insect was found in two Scots pine plantations on Manitoulin Island. This extension places the insect much closer to major stands of jack pine in northern Ontario.

For the third consecutive year low temperatures in the spring caused considerable mortality of the current year's shoots of balsam fir and white spruce at many locations in Ontario. Continued cold weather throughout the summer delayed the development of many insects and in some instances larvae failed to reach maturity before freezing temperatures occurred in the fall.

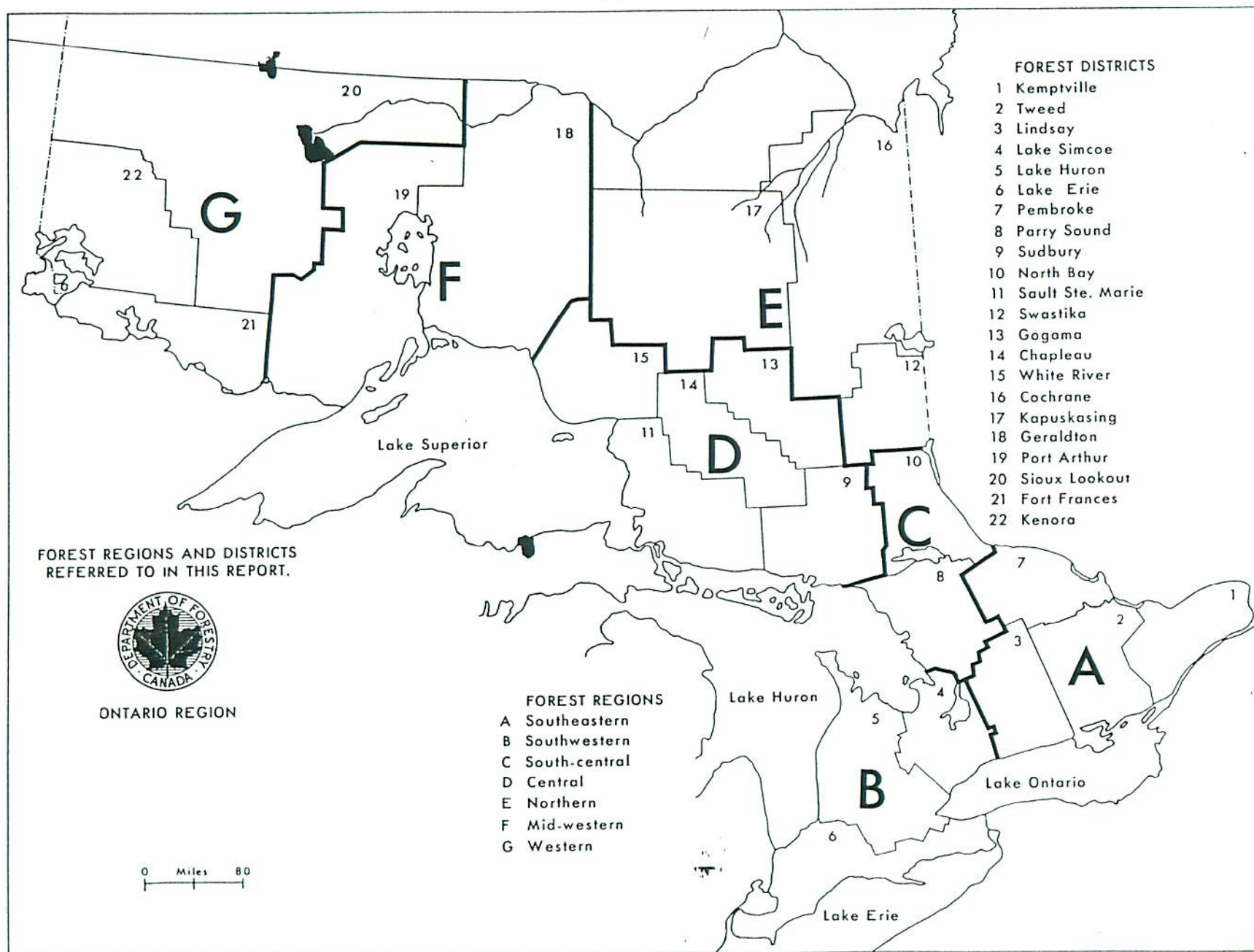
Tree disease surveys continued to reveal serious losses of white elm resulting from Dutch elm disease in southern Ontario. In northern Ontario two centers of infection occurred on Manitoulin Island and infected elm were found at one location near Spanish on the North Shore of Lake Huron. Intensive surveys to determine the distribution and incidence of this disease will be continued in 1966.

During the early years of the Survey in Ontario Field Technicians were largely concerned with determining the distribution and abundance of forest insects and appraising losses in forest stands. As a consequence the detection aspect of survey work was of a high order. Later, added responsibility for disease surveys and the development of more elaborate sampling procedures, reduced the time available for purely detection work. To compensate for this, greater emphasis has been placed on systematic aerial reconnaissance throughout the vast forested areas of central and northern Ontario.

The Survey welcomed the addition of a Forest Research Technician to its staff in 1965. This appointment now provides one field representative for each district in the Southeastern Region where formerly three men were responsible for survey work in four districts.

In the reports that follow, insects and tree diseases that are of interest in adjoining districts are dealt with on a regional basis. Others are dealt with in detail on a district basis.





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\* Regional Supervisors

1965

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## STATUS OF INSECTS

Black-headed Budworm, Acleris variana (Fern.)

Population levels of the black-headed budworm were low for the third consecutive year. Quantitative sampling results from white and black spruce seemed to portray the general status of the insect throughout the district (Table 5).

TABLE 5

Summary of Black-headed Budworm Larval Counts  
in White River District from 1960 to 1965

Note: Counts were based on the total number of larvae from 20 tray samples, two from each of ten trees (4 to 8 inches d.b.h.)

Location (township)	Host	Counts in					
		1960	1961	1962	1963	1964	1965
74	WS	2	21	20	8	11	2
32 Range 27	BS	1	1	2	1	1	0
29 Range 23	WS	-	42	11	0	0	0
30 Range 23	BS	-	40	35	14	0	1

Ugly-nest Caterpillar, Archips cerasivoranus (Fitch)

A heavy infestation of the ugly-nest caterpillar persisted for the fourth consecutive year in the vicinity of the Michipicoten Gun Club. An increase in the number of tents occurred at a sample station in Township 29 Range 23 compared with 1964 (Table 6). This insect was observed in small numbers elsewhere in the district.

TABLE 6

Summary of Ugly-nest Caterpillar Colony Counts in the White River  
District from 1962 to 1965

Location (township)	Sample unit	Number of tents observed			
		1962	1963	1964	1965
29 Range 23	1 square chain	57	1	0	0
74	1 mile roadside	77	18	1	0
30 Range 23	1 mile roadside	200	410	470	435
29 Range 23	1 square chain	0	23	45	56

Birch Skeletonizer, Bucculatrix canadensisella Cham.

A new area of heavy infestation of this insect was observed south of Strickland Lake in Strickland Township in 1965 where white birch foliage in an area of approximately 10 square miles was severely skeletonized. The heavy infestation that had persisted for several years in five townships east of White Lake declined to moderate intensity. A light infestation occurred in Firesand River area near Wawa, and along Manitowik Lake Road where heavy infestations were reported in 1964.



Larch Casebearer, Coleophora laricella (Hbn.)

Population numbers of casebearers in the district increased from 1961 to 1964. However, in 1965, larval counts at all five sample points showed a marked decline compared with 1964 (Table 7).

A mass collection of casebearer larvae submitted from Hunt Township for rearing revealed 24 per cent parasitism by Agathis pumila (Ratz.).

TABLE 7

Summary of Larch Casebearer Larval Counts in White River District  
from 1962 to 1965

Note: Counts were based on the number of larvae from four 18-inch branch tips from each of four trees at each location.

Location (township)	Av. d.b.h. in inches	Av. no. of larvae per branch tip			
		1962	1963	1964	1965
Leslie	4	0.3	0.6	1.0	0.2
71	4	3.4	3.5	7.1	1.8
29 Range 23	5	1.7	0.9	1.1	0.3
30 Range 26	4	2.7	4.8	12.5	8.8
Pic	5	3.0	12.5	14.5	0.6

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

Population levels of this leaf miner showed little change with counts of damaged leaves being only slightly higher at all sample points (Table 8).

A light infestation occurred at Tukanee Lake in Hunt Township where about 15 per cent of the foliage of aspen reproduction was mined.

TABLE 8

Summary of Aspen Blotch Miner Counts in White River District  
from 1964 to 1965

Note: Counts were based on examination of 100 leaves from three trees at each location.

Location (township)	Av. d.b.h. in inches	Per cent of leaves mined	
		1964	1965
Barbara Lake	4	0	1
Mi 0.2 Cp. 70 rd.	3	0	1
Mikano	4	0	1
30 Range 23	3	2	1
Hunt (Population Sign)	2	1	2
Hunt (Tukanee Lake)	2	-	15

Western Tent Caterpillar, Malacosoma pluviale (Dyar)

Numbers of western tent caterpillar colonies decreased from an average of 13 per mile of roadside in 1962 to 4.5 in 1965 (Table 9). Very few tents were observed elsewhere in the district.

TABLE 9

Summary of Western Tent Caterpillar Counts per Measured Mile  
of Roadside in White River District

Location (township)	Number of tents per mile of roadside			
	1962	1963	1964	1965
Mi 18 Manitouwadge rd.	14	10	16	8
Bryant	12	8	6	5
Magone	9	6	6	0
Township 71	14	12	8	5
Mi 7 Cp. 70 rd. O.P.C.	16	17	8	4
District Average	13	10.6	8.8	4.5

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

A notable decline in numbers of this sawfly was observed. Colony counts were generally low in sample plots, the highest being in Rumsey's plantation where an average of 1.5 colonies per tree was recorded on 20 trees (Table 10).

An average of 14 colonies per tree was counted on three moderately-to-severely defoliated jack pine trees in Township 70. Scattered colonies were observed elsewhere in the district.

TABLE 10

Summary of Larval Colony Counts of Red-headed Jack-pine Sawfly  
in White River District from 1963 to 1965

Location (township)	Av. d.b.h. in inches	No of trees examined	Av. no. of colonies per tree		
			1963	1964	1965
Hunt	4-7	20	0.6	0.8	.15
Pearkes	4-7	10	0.3	0.4	0.10
Township 70	2-5	20	1.6	2.2	0.33
Township 64	5-7	20	1.9	2.3	0.50
Rumsey's Plantation	1-2	20	3.2	1.2	1.45
Township 71	2-3	10	0.0	1.4	0.0



Balsam Shoot-boring Sawfly, Pleroneura borealis Felt

Population levels of this shoot-boring sawfly declined sharply (Table 11). Quantitative sampling over a period of years has shown that low numbers occur in alternate years. Late spring frosts in 1965 killed a high percentage of balsam fir buds and was probably a contributing factor in low populations which occurred.

TABLE 11

Summary of Balsam Shoot-boring Sawfly Counts in White River District  
in 1963 to 1965

Note: Counts were based on the examination of 20 branch tips four from each of five trees at each location.

Location (township)	Av. d.b.h. in inches	No. of shoots examined			Per cent shoots infested		
		1963	1964	1965	1963	1964	1965
Mi 10.9							
Manitouwadge Rd.	4	460	351	480	3.9	13.1	0
Township 70	4	510	378	462	2.5	12.2	0
Township 32 Range 28	2	626	578	578	2.1	6.6	0

Amber-marked Birch Leaf Miner, Profenusa thomsoni (Konow)

Heavy infestations of this insect occurred in three townships (Table 12). Defoliation was most severe in mature stands of white birch at the north end of Esnagi Lake in Cudney Township where 83 per cent of the leaves in one sample were mined. Elsewhere in the district population levels were light to medium.

TABLE 12

Summary of Damage by the Amber-marked Birch Leaf Miner  
in White River District in 1965

Note: Counts were based on examination of 100 leaves from three trees at each location.

Location (township)	Av. d.b.h. in inches	Per cent of leaves mined
		1965
Esnagi Lake	2-4	83
Township 32 Range 28	2-4	80
Township 31 Range 27	3-4	71
Pearkes	2-3	33
Hunt	2-3	15-30
Township 28 Range 27	2-3	32
Township 28 Range 24	2-3	3-8
Tedder	2-4	5

Spruce Bud Gall Midge, Rhabdophaga swainei Felt

Population levels of this insect increased at three of four sampling stations (Table 13). The highest count of infested buds was observed on immature black spruce in Township 70.

TABLE 13

Summary of Spruce Bud Midge Counts in White River District  
in 1964 to 1965

Note: Counts were based on examination of 50 branch tips, five from each of ten trees at each location.

Location (township)	Host	Av. d.b.h. in inches	No. of shoots examined in		Per cent of terminal buds infested	
			1964	1965	1964	1965
74	wS	4	187	140	3.2	3.5
70	bS	4	170	156	2.3	7.0
32 Range 27	bS	2	161	153	1.2	3.9
29 Range 23	wS	4	196	142	5.1	2.0

Yellow-headed Spruce Sawfly, Pikonema alaskensis (Roh.)

Pockets of light defoliation occurred on black and white spruce reproduction at Mobert and Regan in Township 71. Small pockets of light to medium infestation were observed in Hunt Township and scattered trees were severely defoliated in Pic Township. Larvae were found in small numbers in beating mat samples throughout the district.

Pitch Nodule Maker, Petrova albicapitana Busck.

A sharp increase in population levels of this insect occurred south of Camp 70 in the Ontario Paper Company limits in the northwestern part of the district. Infestations were heavy in this area and at one point 75 per cent of the jack pine reproduction bore pitch blisters (see photograph).

Although branch killing frequently results from attacks by the pitch nodule maker, there are no records of extensive tree mortality.

A Bark-weevil, Pissodes similis Hopk. in Witches' Broom

In 1965, Dr. S. G. Smith requested the collection of witches' broom on balsam fir caused by the rust Melampsorella caryophyllacearum Schroet. to check on the possible presence of this weevil. On June 15, a witches' broom was collected from Township 28 Range 27, and submitted for examination. A new distribution record of this species resulted from examination and in all probability the first in Canada from balsam fir.



Summary of Miscellaneous Insects Collected in White River District  
in 1965

Insect	Host(s)	Remarks
<i>Adelges lariciatus</i> (Patch)	wS	Small numbers found in Bryant Twp.
<i>Anoplonyx luteipes</i> (Cress.)	tL	Found commonly in Bryant, Mikano, Hunt, and Twp. 64.
<i>Clepsis persicana</i> (Fitch)	W, bF, tA	Small numbers found at scattered points.
<i>Croesus latitarus</i> (Nort.)	wB	Scattered patches of defoliated trees observed. One small pocket in Pic Twp.
<i>Dioryctria reniculella</i> Grt.	wS, bF	Twenty-nine larvae found in witches' broom on bF.
<i>Diprion hercyniae</i> Htg.	wS	Two larvae and one cocoon found in Twp. 70.
<i>Epinotia cruciana</i> (Linn.)	W	Few of this leaf roller found.
<i>Epinotia solandriana</i> (Linn.)	wB, Al, tA	Nine pockets of light infestation.
<i>Eriophyes populi</i> Nal.	tA	Found commonly along shoreline of Hobon Lake.
<i>Euura resinicola</i> (Marlett)	W	Leaf galls found commonly in Pearkes Twp.
<i>Fenusa dohrnii</i> (Tischb.)	Al	Found in small numbers on scattered clumps of alder.
<i>Gonioctena americana</i> (Schaeff.)	tA	Scattered pockets of very light defoliation in Twp. 29 Range 23 and Hunt Twp.
<i>Gracillaria syringella</i> F.	Lilac	Lilac leaf miner found commonly on ornamental trees in White River and Wawa.
<i>Grapholitha prunivora</i> Walsh	pCh	Found commonly in black knot of cherry.
<i>Holcocera immaculella</i> McD.	jP	Fifty per cent of flowers infested in Bryant Twp., light elsewhere in the district.
<i>Lambdina fiscellaria fiscellaria</i> Gn.	bF	One hemlock looper found in beating tray sample.
<i>Laspeyresia youngana</i> Kft.	wS	Larvae found mining new cones in Gertrude Twp.
<i>Malacosoma disstria</i> Hbn.	tA	Only one larva found (Hunt Twp.).
<i>Meroptera praveilla</i> Grt.	tA	Pyralids found in association with <i>Tetralopha applastella</i> Hlst.
<i>Neodiprion abietis complex</i> Harr.	bS, wS, bF	Thirty-one larvae found in beating tray samples.
<i>Neodiprion nanulus nanulus</i> Schedl.	jP	Single colonies of red pine sawfly in Twp. 74, Twp. 29 Range 23 and Hunt Twp.





## Miscellaneous Insects (continued)

Insect	Host(s)	Remarks
<i>Nycteola frigidana</i> Wlk.	W	Light infestations found on willow at scattered points.
<i>Phratora purpurea purpurea</i> Brown	tA	Light skeletonizing in Pearkes Twp.
<i>Pikonema dimmockii</i> (Cress.)	bS, wS	Fourteen larvae found in beating tray samples.
<i>Pissodes approximatus</i> Hopk.	rP	Less than 2 per cent mortality in Rumsey's plantation.
<i>Pseudexentera oregonana</i> Wlshm.	tA	Leaf rollers found commonly in the district.
<i>Rhabdophaga brassicoides</i> (Walsh)	W	Numerous cabbage galls observed in the district.
<i>Tetralopha aplastella</i> Hlst.	tA	Numerous webbed leaves found in the district.
<i>Trichiosoma triangulum</i> Kby.	bAs, Se, wB	Small numbers of larvae found in beating tray samples.
<i>Zale</i> sp. (prob. <i>minerea</i> ) Gn.	wB	Twenty-eight larvae found in beating tray samples in Gertrude Twp.

