

FORECASTS OF FOREST TENT CATERPILLAR DAMAGE IN ONTARIO IN 1966

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ONTARIO REGION  
FOREST RESEARCH LABORATORY  
SAULT STE. MARIE

INFORMATION REPORT O-X-30

DEPARTMENT OF FORESTRY  
APRIL, 1966

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Director, Ontario Region,  
Canada Dept. of Forestry,  
Box 490,  
Sault Ste. Marie, Ont.

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For further information on the life history, habits, and control of the forest tent caterpillar, write to the Director, Ontario Region, Canada Dept. of Forestry, Box 490, Sault Ste. Marie, Ont.

FOREST TENT CATERPILLAR  
*Malacosoma disstria* Hbn.



Young caterpillars emerging from eggs which surround the twigs of trembling aspen.



Caterpillars often congregate on the stems and bole of the host tree.



The fully grown caterpillar spins a silken cocoon, usually among leaves (left), changes to a pupa, and later gives rise to a moth (right).

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## INTRODUCTION

The forest tent caterpillar, Malacosoma disstria Hbn. is one of several native insect pests that occurs in outbreak proportions in Ontario. The earliest outbreak reported in the Province dates back to 1867, and since then ten have occurred at roughly 10-year intervals, the most recent originating in 1960.

During an outbreak, phenomenal numbers of the insect infest aspen and other deciduous tree species, usually causing severe defoliation during May and June for several consecutive years. This loss of foliage retards the growth of host trees but in vigorous stands, rarely causes tree mortality. In heavy infestations, thousands of caterpillars infest each tree, and after the trees are stripped of their foliage the caterpillars migrate in search of additional food. Such migrations are a source of great annoyance to campers, cottagers, and others who live or work in the woods. Under extreme conditions, masses of caterpillars have been known to cause hazardous driving conditions on highways, stall railway locomotives, and short circuit power lines.

The collapse of an outbreak is often as spectacular as its rapid development. Concentrations of caterpillars and their cocoons favour an increase in parasites and the development of disease epidemics. These biological control factors (insect parasites and disease organisms) decimate populations and usually bring about the termination of outbreaks within three to five years. Outbreaks have also been known to terminate abruptly as a result of unusually cold and wet weather in the spring after the eggs have hatched and before much feeding occurs.

FOREST TENT CATERPILLAR,  
*Malacosoma disstria* Hbn.



Severe defoliation of aspen trees



Aerial view showing extensive severe defoliation

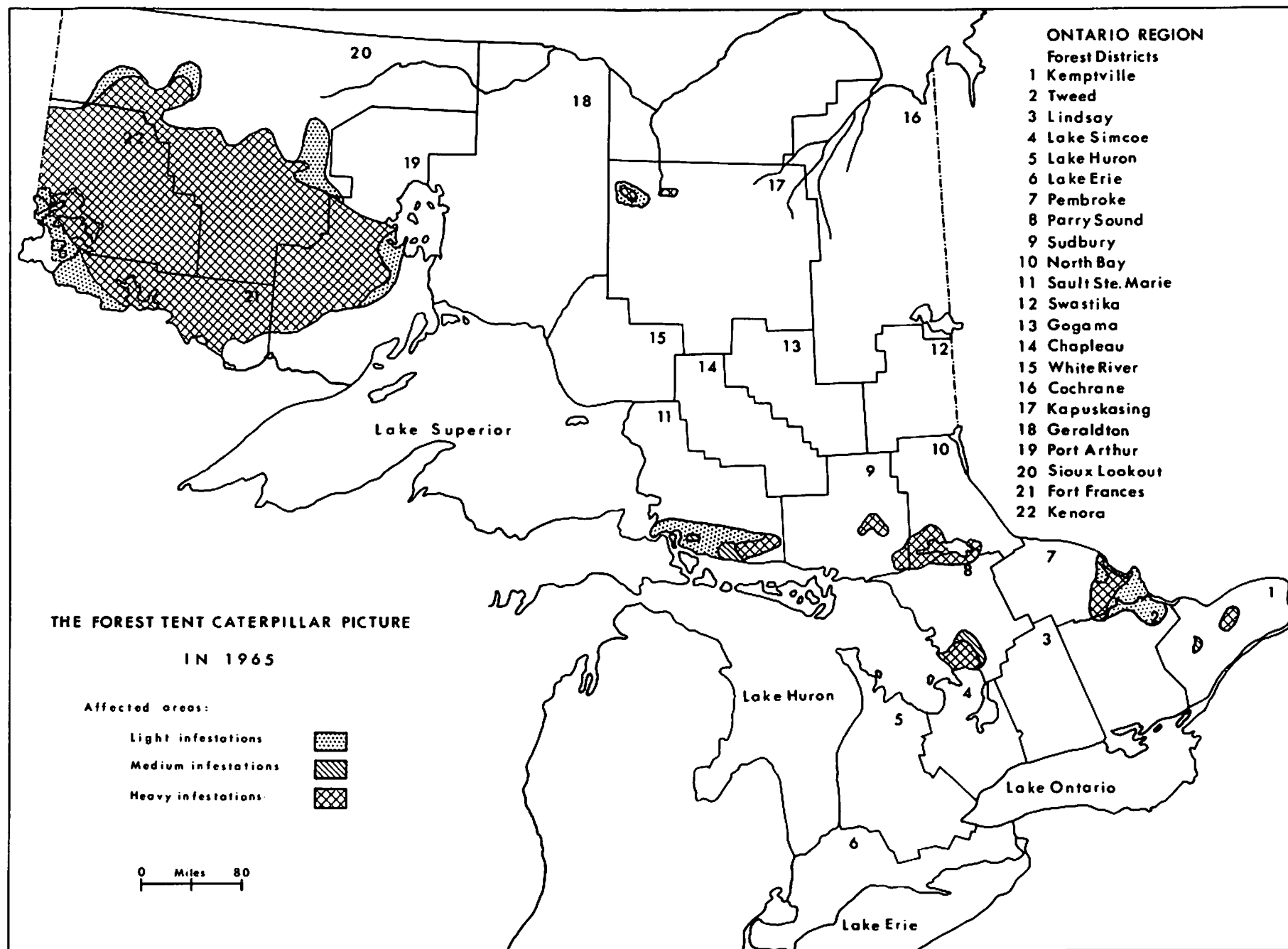


TABLE 1

Expansion of the Forest Tent Caterpillar in Various Parts of  
Ontario Between 1960 and 1965

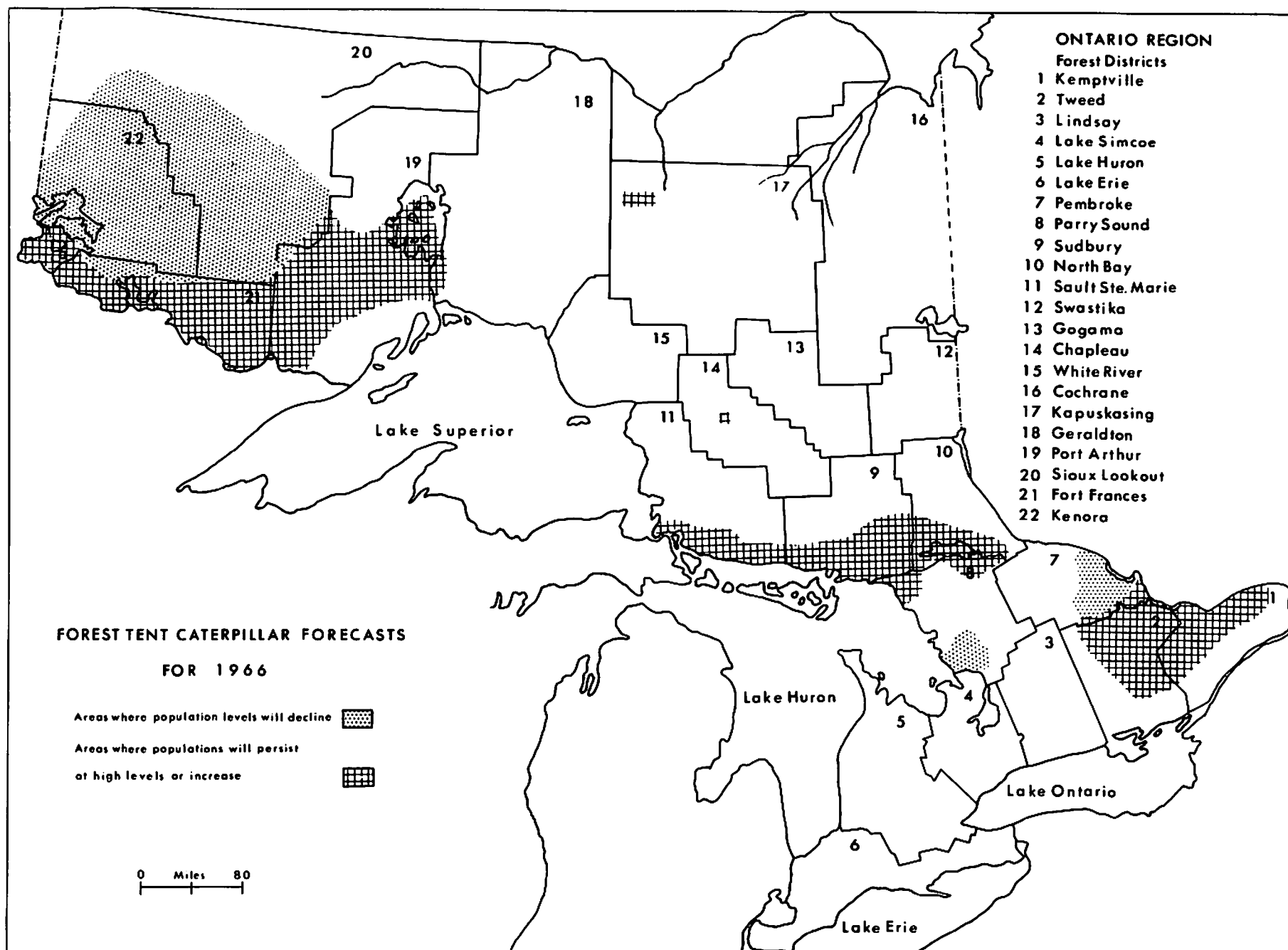
Location	1960	Approximate extent in square miles				
		1961	1962	1963	1964	1965
Northwestern Ontario	100	1,000	18,000	24,500	29,500	38,000
Sudbury	140	100	200	225	250	600
Lake Nipissing	-	-	144	200	325	700
Parry Sound	-	-	325	500	650	970
Pembroke	-	-	20	500	2,000	1,750
Sault Ste. Marie	-	-	-	-	100	500

#### FORECASTS

Generalized defoliation forecasts, as shown cartographically in Fig. 2 and presented verbally below, are based mainly on the egg-band counts made at 150 sample points, Table II. Individual forecasts are based on the following standards for trees of two size classes:

Average number of egg-bands per tree of size:		Defoliation forecast
2 to 6" d.b.h.	more than 6" d.b.h.	
1	1 to 5	Light
2 to 5	6 to 9	Moderate
6 or more	10 or more	Severe

Forecasts for 1966 call for a major reduction in the intensity of defoliation compared with 1965 in Sioux Lookout and Kenora districts, where defoliation will be mainly light. This is forecast despite some high egg-band counts because, as previously explained, the crest of the outbreak in these two districts has passed. Extensive areas of severe defoliation will recur in Fort Frances District and extend eastward through a large part of Port Arthur District to Lake Nipigon. One relatively small area of severe defoliation is forecast for Kapuskasing District.





Heavy infestations will be more extensive than 1965 along the North Channel of Lake Huron, will continue and enlarge around Lake Nipissing, and will recur and increase in extent in the northern parts of Tweed and Kemptville districts. Compared with 1965, caterpillar numbers will drop off in the older areas of infestation in Parry Sound and Pembroke districts and to some extent in the Sudbury area but in all three districts defoliation will again be noticeable during the next two or three months.

TABIE II

Summary of Forest Tent Caterpillar Egg Band Counts in 1965 and Specific Defoliation Forecasts for 1966

Location	Av. d.b.h. of sampled trees	Av. no. of egg bands per tree	Defoliation forecast for 1966
<u>Sioux Lookout District</u>			
Norway Lake	4"	11	Severe
Vermilion Add. Tp.	4	6	"
Block 10	4	4	Moderate
Corman Tp.	4	4	"
McAree Tp.	4	3	"
Sturgeon Lake	5	3	"
Savant Lake	4	4	"
Highstone Lake	3	3	"
Ilsely Tp.	4	2	Light
Uchi Road	3	2	"
Baird Tp.	3	1	"
Valora Road	4	2	"
Wapesi Lake	4	2	"
Raggedwood Lake	4	1	"
Otatakan Lake	3	1	"
<u>Kenora District</u>			
Zealand Tp.	4	11	Severe
Mutrie Tp.	3	6	"
Canyon Lake	4	13	"
Sand Lake	3	9	"
Lemay Tp.	5	10	"
Minaki	4	7	"
Perrault Lake	4	7	"
Bay Is. (Lake of the Woods)	5	13	"
Godson Lake	3	6	"
Camp Robinson	3	6	"
Ewart Tp.	4	8	"

TABLE II (cont'd.)

Location	Av. d.b.h. of sampled trees	Av. no. of egg- bands per tree	Defoliation forecast for 1966
Sabaskong Bay	4	9	Severe
Southworth Tp.	3	3	Moderate
Willingdon Tp.	3	3	"
Work Tp.	4	5	"
Upper Manitou Lake	5	4	"
Atikwa Lake	3	5	"
Redditt Tp.	3	2	Light
Slaterly Tp.	4	1	"
Tustin Tp.	3	2	"
<u>Fort Frances District</u>			
Northeast Bay (Rainy Lake)	5	31	Severe
Sandpoint Is. (Rainy Lake)	5	17	"
Kingsford Tp.	4	8	"
Eltreet Lake	4	8	"
East District boundary	4	53	"
Quetico Lake	4	23	"
Atikokan	5	33	"
Kairaskons Lake	5	19	"
Manion Lake	4	27	"
Redgut Bay (Rainy Lake)	5	23	"
Northwest Bay (Rainy Lake)	4	23	"
Eye Lake	4	37	"
Claxton Tp.	4	3	Moderate
Little Turtle Lake	4	3	"
McCrosson Tp.	3	5	"
Robinson Lake	4	4	"
Dobie Tp.	3	1	Light
<u>Port Arthur District</u>			
Upsala Tp.	12	295	Severe
6 mi. north of Buck Lake	14	257	"
Kabitotikwia Lake	10	227	"
Pyramid Tp.	9	185	"
30 mi. north Dog River Road	5	153	"
Lac Des Mille Lac	8	115	"
West District boundary (Hwy. 11)	6	99	"
Upsala Tp.	5	68	"
12 mi. east F.F.-P.A. border	5	61	"
Burchell Lake	7	59	"
Muskeg Lake	6	55	"
Trewartha Tp.	4	47	"
Holinshead Lake	9	42	"
Inwood Tp.	5	40	"
Poshkokagan Lake	7	37	"
Colliver Tp.	5	36	"
Titmarsh Lake	5	32	"

TABLE II (cont'd)

Location	Av. d.b.h. of sampled trees	Av. no. of egg- bands per tree	Defoliation Forecast for 1966
Athelstane Lake	5	28	Severe
Lac Des Mille Lac	5	26	"
Black Sturgeon Lake	4	25	"
Pyramid Tp.	4	18	"
Saganagons Lake	4	12	"
Golding Tp.	4	10	"
Black Sturgeon Lake (south)	8	7	Moderate
Kekakaub Lake	5	5	"
55 mi. north Spruce River road	6	5	"
Batwing Lake	5	5	"
Black Sturgeon Lake (dam)	4	2	"
45 mi. north Spruce River road	7	2	Light
Fowler Tp.	4	2	"
Soper Tp.	5	2	"
Blackwell Tp.	4	1	"
McMaster Tp.	4	1	"
Canthook Lake	5	1	"
Goldie Tp.	4	1	"
Gorham Tp.	4	1	"
Ware Tp.	4	1	"
Fowler Tp. (Dog Lake)	5	0.3	"
Conmee Tp.	4	0.3	"
<u>Geraldton District</u>			
Murchison Is. (Lake Nipigon)	7	6	Moderate
Bell Is. (Lake Nipigon)	5	4	Light
MacDiarmid	7	0.3	"
Blacksand Park	7	0.3	"
Lake Helen	8	0.3	"
<u>Kapuskasing District</u>			
Bicknell Tp.	4	28	Severe
Tp. 138	10	23	"
<u>Chapleau District</u>			
Chapleau	5	2	Light
<u>Swastika District</u>			
Harley Tp.	4	1	Light
Harris Tp.	4	0.3	"
<u>Sault Ste. Marie District</u>			
Cobden Tp.	6	106	Severe
Scarfe Tp.	5	131	"
Procter Tp.	5	34	"
Johnson Tp.	4	67	"

TABLE II (cont'd.)

Location	Av. d.b.h. of sampled trees	Av. no. of egg- bands per tree	Defoliation forecast for 1966
Day Tp.	4	12	Severe
Meredith Tp.	4	18	"
Patton Tp.	5	17	"
Gladstone Tp.	6	4	Moderate
Kirkwood Tp.	5	3	"
Plummer Tp.	6	1	Light
Tarbutt Addt'l. Tp.	5	2	"
<u>Sudbury District</u>			
Graham Tp.	5	15	Severe
Bigwood Tp.	4	62	"
Dill Tp.	4	42	"
Merritt Tp.	3	37	"
Cox Tp.	5	15	"
Burwash Tp.	5	2	Light
Shedden Tp.	5	1	"
Foster Tp.	5	0.3	"
Curtin Tp.	6	1	"
129	7	2	"
Louise Tp.	6	1	"
Dryden Tp.	5	1	"
Hammer Tp.	5	1	"
<u>North Bay District</u>			
Badgerow Tp.	4	42	Severe
Leulon Tp.	6	96	"
East Ferris Tp.	5	17	"
Beaucage Tp.	4	6	"
Bastedo Tp.	6	2	Light
Widdifield Tp.	4	2	"
Crerar Tp.	4	1	"
Bonfield Tp.	5	1	"
<u>Parry Sound District</u>			
Nipissing Tp.	6	24	Severe
French River	5	30	"
Medora Tp.	6	27	"
Wood Tp.	6	22	"
Gibson Tp.	6	32	"
Mowat Tp.	5	3	Moderate
Boulter Tp.	6	1	Light
South Himsworth Tp.	5	1	"
McAulay Tp.	5	1	"
<u>Pembroke District</u>			
Alice Tp.	3	6	Severe

TABLE II (cont'd.)

Location	Av. d.b.h. of sampled trees	Av. no. of egg- bands per tree	Defoliation forecast for 1966
Fraser Tp.	10	19	Severe
Bromley Tp.	3	2	Moderate
Westmeath Tp.	5	3	"
Buchanan Tp.	10	3	Light
Burns Tp.	10	2	"
Master Tp.	9	3	"
Richards Tp.	10	4	"
S. Algona Tp.	2	1	"
Dickens Tp.	8	0.6	"
<u>Tweed District</u>			
Bangor Tp.	5	37	Severe
Kaladar Tp.	3	12	"
Radcliffe Tp.	6	17	"
McNab Tp.	2	1	Light
<u>Kemptville District</u>			
Cambridge Tp.	2	7	Severe
Osgoode Tp.	3	7	"
S. Plantagenet Tp.	2	10	"
Tarbolton Tp.	2	3	Moderate

#### ACKNOWLEDGEMENTS

The data used in this report were collected by a number of Field Technicians of the Forest Insect and Disease Survey, Forest Research Laboratory, Sault Ste. Marie. Their assistance is gratefully acknowledged.