

REPORT ON JACK PINE SAWFLY INFESTATIONS

IN QUEBEC - 1955

by

Rene Martineau

Forest Biology Laboratory

Quebec, P.Q.

CANADA

DEPARTMENT OF AGRICULTURE

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Report on the Jack Pine Sawfly Survey in Central and Western Quebec - 1955

I. INTRODUCTION

The special survey on the Jack Pine sawfly in Quebec, initiated in the spring of 1954, was continued in 1955. The same territory was surveyed in both years; it included the St. Maurice watershed and the territories south and west of this watershed.

In 1955 the field work was again carried out with the active co-operation of the personnel of limit holders who were already well acquainted with the sampling procedure. Written instructions were distributed in early spring to all cooperators and the material necessary for making collections was furnished upon request.

In addition to the ground survey, an aerial reconnaissance was conducted over the same territory in late summer, with the main purpose of obtaining more complete information on the location and status of sawfly infestations, as well as the distribution of Jack pine stands.

This year also some intensive studies were initiated on the biology, ecology and natural factors of control of Jack pine sawflies, at a temporary field station established at Clova. Observations made during this first year of work will be the subject of a special report and the purpose of the present one is to summarize the observations made in connection with the ground and aerial surveys.

II. METHOD OF SURVEY

The ground survey was conducted in 1955 along the same general lines as described in last year's report. The insect population was sampled twice during the year, first in the soil as overwintering cocoons and later as feeding larvae. Co-operators were requested to take eight cocoon samples from each "Quebec Insect Survey" zone in Jack pine stands, whereas only one half of these locations had to be sampled for larvae. In each location a cocoon sample consisted in collecting all cocoons found within two one-foot quadrates of forest humus. The larval samples were obtained by beating the tree and collecting the larvae on a standard ten-square-foot cotton sheet. All insect material was shipped to the Clova Field Station for analysis and rearing.

The aerial reconnaissance was done in a Cessna 180 at a cruising speed of 110 miles per hour, and at an altitude of approximately 500 feet. The survey was conducted in such a manner as to furnish a good general appraisal of conditions over the whole territory covered by Jack pine. This work was completed in 20 hours flying by Mr. Roger Ducharme, Forest Biology Ranger and part-time by Mr. Howard A. Tripp, Research Officer in charge of a project on Jack pine sawflies. Varying degrees of infestation could be detected from the air, on the basis of colour variations in the appearance of the foliage. Old infestations were easily detected, but it was more difficult to determine the lightly infested areas.

III. RESULTS AND DISCUSSION

A total of 422 collections were made in 1955, consisting of 266 cocoon samples and 156 larval samples. This corresponds to approxi-

mately 59 per cent of the number made in 1954. Cocoon sampling was performed between May 28 and July 15, a period of only one and a half months, as compared to a period of three months for the previous season. The following table shows the progression in sampling for both 1954 and 1955.

Table I. Distribution in Time of Cocoon Samples

Date of Sampling	Cumulative Percentages	
	1954	1955
May 11-20	2.8	
21-31	9.5	15.0
June 1-10	52.4	47.0
11-20	85.5	75.2
20-30	96.2	97.4
July 1-10	97.8	98.9
11-20	98.0	100.0
Aug. 11-20	100.0	

The territory surveyed in 1955 was much smaller than in 1954, since only 97 zones were sampled as compared to 176 the previous year. Even so, it was possible to derive additional information on the distribution and abundance of Neodiprion swainei, the only species recovered in 1955. A detailed summary of the data pertaining to each zone is given in a table in appendix. These data, together with information

gathered during the aerial reconnaissance, have been used in the preparation of the infestation map included at the end of this report. When examining this map it must be remembered that the various degrees of infestation given concern large areas only, and should not be interpreted as portraying exactly the degree of damage for particular stands. The degree of infestation of individual stands may be higher or lower than for the area as a whole. However, by contrasting this map with that of the 1954 survey, it is apparent that in 1955 a general decrease in the intensity of the infestation occurred over most of the territory under sawfly attack, although centers of heavy infestation were still found at Lake Tourbis, Lake à la Carpe, Lake Gagnon, and Landry and Buies townships. These centers of heavy infestation were generally surrounded by areas of moderate infestation. Isolated areas of medium infestation were also found at Lake Barrière in the Ottawa River watershed and at Lake des Isles on the Trenche River.

The decline in sawfly population is quite apparent when the number of collections and the number of individuals per collection is compared for both years (Table II). The table shows that the proportion of positive sampling points for both cocoon and larval collections was approximately the same in both years, but that the average number of cocoons per square foot dropped from 3.8 to 2.5 and the number of larvae per collection from 16.6 to 9.6. When only the positive points are considered, the average number of cocoons was 8.9 and 6.5, and the number of larvae was 33.0 and 18.3 for 1954 and 1955 respectively.

The reduction in population was not uniform over the whole territory under sawfly attack and in order to bring out the existing

conditions for various sectors, the whole territory was subdivided arbitrarily into three broad regions: the western region (Ottawa) comprising the territory west of the Mont Laurier-Senneterre highway; the central region (Gatineau and Lievre) extending from the above-mentioned highway to the St. Maurice watershed; and the eastern region or the St. Maurice watershed. Data pertaining to each of these regions are also shown in Table II.

The decrease in sawfly abundance which occurred in certain areas was no doubt the result of an intensification in the action of some natural control factors. Unfortunately, insufficient data have been secured to draw even tentative conclusions on the responsible factors. In fact, a total of only 1938 cocoons of all categories were gathered in 1955 from the entire territory under survey and this number is not sufficient to give a true picture of the situation in any one particular area. Results of the analysis of all cocoons collected both in 1954 and 1955 is given in Table III. This table shows that only 2.2 per cent of the cocoons were apparently healthy when they reached the laboratory in 1955, whereas in the previous year the percentage was 14.4. It is possible however, that the decrease in the proportion of sound cocoons was not quite as important as indicated by the figure owing to the fact that due to a late start in sampling in 1955, coupled with an early spring which accelerated adult emergence, a certain percentage of adults had already emerged at the time sampling started in certain regions.

Table II. Jack Pine Sawfly Population Data by Region - 1954 - 1955.

	Regions									
	Total Territory		Western (Ottawa)			Central (Gat.-Lievre)			Eastern (St. Maurice)	
	1954	1955	1954	1955	1954	1955	1954	1955	1954	1955
1	2	3	4	5	6	7	8	9		
A. Cocoons										
a) Number of collection points	441	266	41	32	136	72	258	160		
b) Average no. cocoons / sq.ft. examined	3.8	2.5	0.31	0.87	8.2	3.5	2.45	2.41		
c) Average no. cocoons / sq.ft. at positive collection points	8.9	6.5	1.7	3.2	13.1	10.2	6.2	5.8		
d) Percentage of positive collections	55.1	54.5								
B. Larvae										
a) No. collection points	274	156	46	2	68	47	159	106		
b) Average no. larvae / collection	16.6	9.6	3.9	0	17.0	5.4	19.2	11.8		
c) Average no. larvae / collection at positive points	33.0	18.3	19.8	0	28.9	9.4	34.4	27.2		
d) Percentage of positive collections	50.4	47.4								

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Table III

Percentage of Sawfly Cocoons in Various Categories at Time of Reception

Classification	1954	1955
Apparently sound	14.4	2.2
Host emerged	13.7	17.0
Parasitized	16.6	17.5
Chewed (small mammals)	54.1	60.8
Dead from unknown cause	1.2	2.5
Total number cocoons examined	4,941.	1,938.

IV. SUMMARY AND CONCLUSIONS

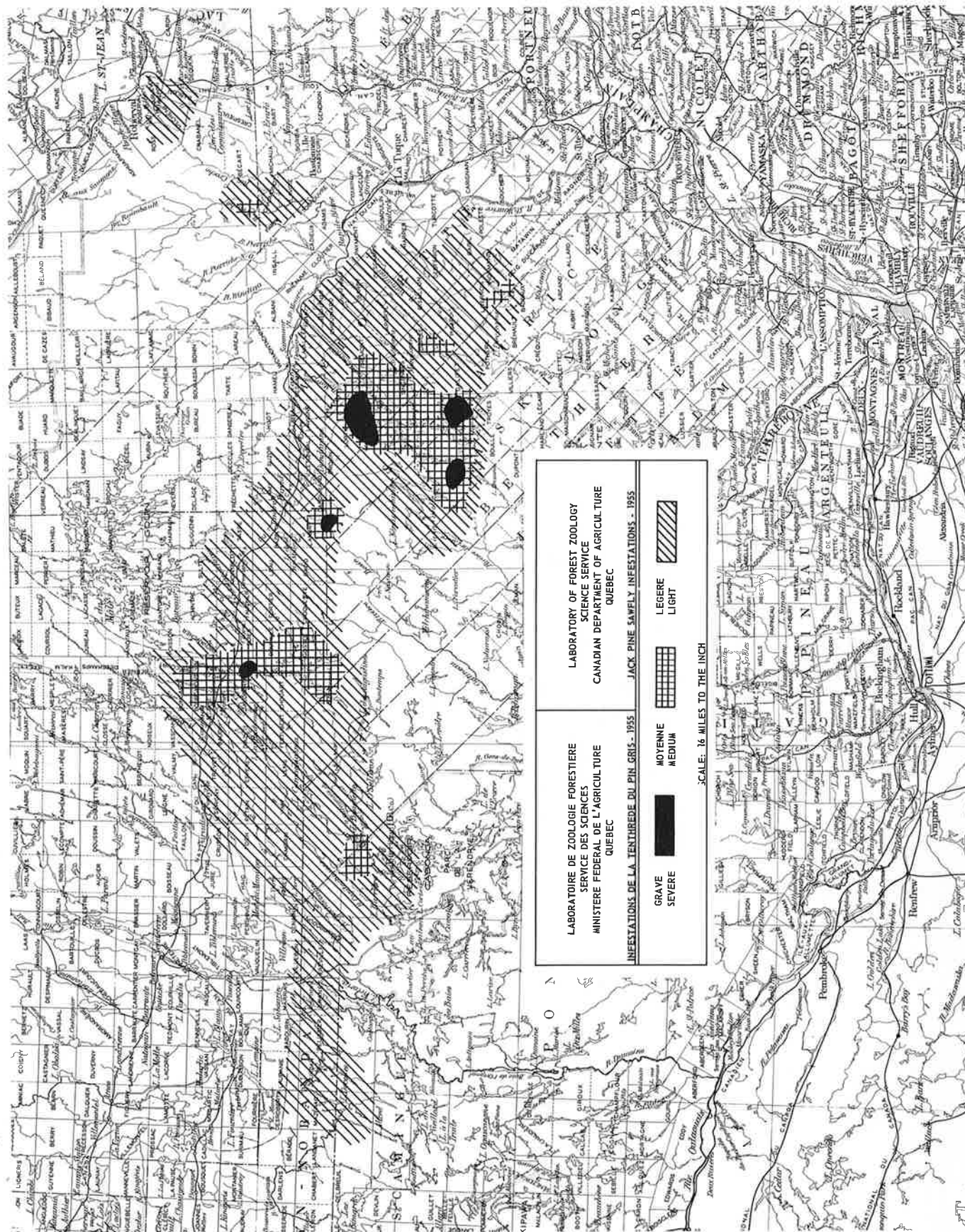
The extent and severity of infestation by sawflies responsible for Jack pine deterioration in central and northwestern Quebec was determined in 1955 through a ground survey similar to that made in 1954. Additional information was also secured in 1955 during an aerial reconnaissance conducted in late summer.




In 1955, only one species of sawfly, Neodiprion swainei, was recovered from the miscellaneous samples taken over the whole territory under attack. This would indicate that the two other species, N. banksianae and N. virginiana, reported in 1954 are not very common, and for the present are of no great economic importance.

One of the most important features of the 1955 outbreak, as compared to that of the preceding year, was the material reduction in both number and intensity of infestations in certain areas, notably in the Ottawa region. The future of the outbreak cannot be forecast to any

degree of accuracy with the information in hands, although it is believed that the decline noted last year is only temporary and the population will again climb to high level.

In conclusion, it can be said that the survey carried out during the last two years gave much valuable information on the distribution and abundance of the sawflies in various regions of the Province, although, up to the present, very little information has been gained on the actual condition of the trees. It is hoped for this coming year that such information will be gathered in order to permit recommendations on salvage and possible application of direct methods of control.



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INFESTATIONS DE LA TENTHREDE DU PIN GRIS - 1955	JACK PINE SAWFLY INFESTATIONS - 1955
GRAVE SEVERE	MOYENNE MEDIUM
	
LEGERE LIGHT	

SCALE: 16 MILES TO THE INCH

SUMMARY OF JACK PINE SAWFLY SAMPLING 1954-1955

Zone No.	Key for Zone Location	Measure																							
		3		4		5		6		7		8		9		10		11		12		13		14	
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Total	Sound	Total	Sound	Total	Sound
		No. Cocoon Samples		No. Larval Samples		No. Cocoon Samples		No. Larval Samples		No. Cocoon Samples		No. Larval Samples		No. Cocoon Samples		No. Larval Samples		No. Cocoon Samples		No. Larval Samples		No. Cocoon Samples		No. Larval Samples	
		1954		1955		1954		1955		1954		1955		1954		1955		1954		1955		1954		1955	
161	St. Lin	0	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	-	-	
348	Desert L.	-	-	-	1	-	1	-	1	-	0	-	0	-	1	-	0	-	-	-	-	0.0	0.0	-	-
351	Robertson Tp.	-	1	0	1	-	1	-	1	-	0	-	0	-	1	-	0	-	-	-	0.0	0.0	0.0	0.0	
416	Brassard Tp.	0	1	0	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	0.0	0.0	0.0	0.0	
417	Toro L.	0	1	0	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	0.0	0.0	0.0	0.0	
418	Toro L.	0	1	0	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	0.0	0.0	0.0	0.0	
475	Toro L.	0	1	0	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	0.0	0.0	0.0	0.0	
477	Mattawin Riv.	4	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-	-	-	5.0	0.0	-	-	
478	Mattawin Riv.	3	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-	-	3.3	0.2	1.3	0.0	
479	Mattawin Riv.	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0.0	0.0	
535	Chienne L.	2	0	2	4	2	4	2	4	3	3	0	1	1	3	0	1	0	0	0	46.7	0.7	3.0	0.0	
536	Big Eagle L.	5	0	4	4	4	4	3	3	1	3	0	1	1	3	0	1	0	0	0	4.0	1.6	1.4	0.2	
588	Lievre Riv.	1	0	1	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	24.0	4.0	1.5	0.0	
589	Manuan	3	0	3	3	3	3	3	3	0	3	0	1	1	3	0	1	0	0	0	19.3	1.6	16.5	0.0	
590	Tourbis L.	0	2	-	2	-	2	-	2	-	0	-	0	-	0	-	0	-	-	-	0.0	0.0	-	-	
591	A la Carpe L.	2	2	2	2	2	2	2	2	2	0	0	0	0	2	0	0	0	0	0	1.8	0.6	15.7	0.0	
593	Galipet Tp.	8	0	6	6	6	6	6	6	1	4	4	4	4	7	4	2	2	2	2	4.1	0.6	1.0	0.0	
594	Picard L.	7	0	6	6	6	6	6	6	1	2	2	2	2	1	0	0	0	0	0	10.6	2.0	4.5	0.6	
595	Livernois Tp.	6	0	2	2	2	2	2	2	1	5	5	5	5	2	4	2	2	2	2	2.4	0.9	1.5	0.0	
596	Geoffrion Tp.	3	3	-	3	-	3	-	3	-	4	4	4	4	0	3	0	0	0	0	0.3	0.0	-	-	
597	Baril Tp.	4	2	-	2	-	2	-	2	-	2	-	2	-	2	-	2	-	-	-	0.4	0.0	-	-	
598	Turcotte Tp.	-	-	-	-	-	-	-	-	-	2	2	2	2	1	2	2	2	2	2	-	-	-	-	
599	Clair L.	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	-	-	-	-	
621	Des Quinze L.	-	-	0	1	0	1	0	1	0	2	2	2	2	0	2	2	2	2	2	-	-	0.0	0.0	
622	Latulipe	-	-	1	6	1	6	1	6	1	3	3	3	3	1	3	3	3	3	3	-	-	0.1	0.0	
626	Bay L.	0	1	0	1	0	1	0	1	0	1	0	1	0	0	1	0	0	0	0	0.0	0.0	0.0	0.0	
633	Cawatose L.	-	-	-	-	-	-	-	-	-	1	1	1	1	0	1	0	0	0	0	-	-	-	-	
634	Corbeil L.	-	-	-	-	-	-	-	-	-	0	0	0	0	1	0	0	0	0	0	-	-	-	-	

Summary of Jack Pine Sawfly Sampling 1954-1955 Cont.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
635	Cabonga Reservoir	7	0	4	1	1	0	2	2	31.4	3.0	1.8	0.1
649	Kempt L.	4	0	3	0	0	1	1	2	19.9	1.6	9.5	0.2
650	Kempt L.	2	1	3	1	0	2	1	1	3.2	0.3	2.3	0.0
651	Kempt L.	5	0	3	0	3	0	2	1	14.0	1.4	16.3	0.3
652	Mondonac L.	6	1	2	0	3	0	2	2	5.6	0.9	17.5	0.0
653	Dupuis L.	8	0	8	0	5	0	3	0	5.9	0.8	4.0	0.2
654	Gagnon Riv.	6	2	5	0	9	3	1	0	1.8	0.2	3.3	0.0
655	Vermillon Riv.	3	3	3	0	4	2	-	-	0.9	0.2	5.5	0.2
656	O'Kane L.	-	-	-	-	1	0	-	-	-	-	-	-
659	La Tuque	-	-	-	-	1	0	-	-	-	-	-	-
687	Simard L.	-	-	0	1	0	1	-	-	-	-	0.0	0.0
691	Esturgeon Riv.	-	1	1	0	0	1	-	-	0.0	0.0	0.5	0.0
692	Alfred L.	-	2	2	0	0	1	-	-	-	-	1.2	0.0
697	Dozois L.	-	-	1	2	0	2	-	-	0.0	0.0	0.0	0.0
699	Capitachouane Riv.	-	-	0	1	0	1	-	-	-	-	0.2	0.0
700	Barriere L.	-	-	1	0	0	0	-	-	-	-	0.5	0.0
701	Bouchette L.	5	1	2	0	1	0	1	0	12.6	1.5	9.5	0.0
702	Laudron L.	4	2	2	0	3	0	1	1	11.6	1.2	0.3	0.5
706	Des Augustines L.	2	0	-	-	-	0	-	-	4.6	0.1	-	-
707	Ottawa L.	3	1	-	-	1	0	-	-	2.2	0.1	-	-
708	Misery Cr.	1	0	-	-	1	0	-	-	1.2	0.0	-	-
714	Nemikachi Riv.	-	-	-	-	0	1	0	1	-	-	1.5	0.0
715	Kempt L.	1	1	1	1	0	3	2	0	0.9	0.3	2.2	0.0
716	Manuan L.	2	3	2	0	6	0	2	0	4.3	0.6	17.0	0.0
717	Chateauvert L.	10	0	4	0	7	0	2	1	4.4	1.0	9.6	0.2
718	Fremont Tp.	5	4	3	2	1	2	2	1	0.9	0.4	0.5	0.0
719	Laporte Tp.	0	5	3	4	2	2	2	1	0.0	0.0	1.8	0.0
720	Flamand L.	1	4	-	-	0	1	-	-	0.1	0.0	-	-
756	Landanet Tp.	1	0	-	-	0	3	-	-	5.0	0.0	-	-
757	Landanet Tp.	1	1	-	-	0	2	-	-	0.0	0.0	0.3	0.0
758	Decelles L.	1	1	1	1	0	2	-	-	0.5	0.0	1.5	0.0
759	Jourdan L.	2	0	2	1	0	2	-	-	0.3	0.0	0.3	0.0
760	Pelissier Tp.	1	2	1	1	0	2	-	-	0.0	0.0	-	-
761	Granet L.	0	2	1	1	0	3	-	-	0.0	0.0	0.0	0.0
762	Granet Tp.	0	3	0	1	0	2	-	-	0.0	0.0	0.0	0.0
763	Freville Tp.	1	3	0	4	0	5	-	-	0.1	0.0	0.0	0.0

Summary of Jack Pine Sawfly Sampling 1954-1955 Cont.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
764	Champrodon Tp.	1	1	0	2	0	2	-	-	0.2	0.0	0.0	0.0
765	Chochoouane Riv.	0	3	0	1	0	1	-	-	0.0	0.0	0.0	0.0
766	Capitachouane Riv.	-	0	0	1	-	0	-	-	-	-	0.0	0.0
767	Capitachouane Riv.	3	0	2	2	3	0	2	1	25.7	5.2	0.6	0.0
768	Camachigama L.	8	0	2	2	5	2	5	1	11.3	1.2	3.1	0.1
769	Camachigama L.	4	0	-	-	2	0	1	0	5.7	1.5	-	-
770	Ottawa Riv.	-	0	0	1	-	-	-	-	-	-	0.0	0.0
771	Fulham L.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
772	Eswahani L.	3	1	-	-	-	-	-	-	13.7	0.0	-	-
773	Sutherland L.	6	0	-	0	2	1	2	0	10.8	1.6	10.1	0.7
774	Lefevre L.	11	0	6	1	2	1	3	1	5.5	1.5	7.6	0.0
775	Choquette L.	5	2	2	3	-	0	1	0	2.3	1.1	1.2	0.1
776	Blueberry Riv.	1	2	0	2	2	0	0	1	0.1	0.0	0.0	0.0
777	Sauterelle L.	2	3	0	2	2	2	1	2	3.2	1.0	0.0	0.0
778	Bazin Riv.	3	0	-	-	2	0	1	0	6.0	1.2	-	-
779	Dandurand L.	-	1	-	-	1	0	-	-	-	-	-	0.0
780	Dandurand L.	2	8	1	0	0	1	0	1	0.2	0.2	0.5	0.0
781	Lortie Tp.	0	1	1	7	2	6	0	7	0.0	0.0	0.1	0.0
782	Lavigne Tp.	7	1	7	1	7	1	7	2	5.0	1.7	2.6	0.1
783	Chateauvert L.	2	0	3	0	4	0	0	-	1.3	0.7	3.1	0.3
784	Chateauvert Tp.	2	0	0	1	2	0	0	1	0.3	0.0	0.0	0.0
785	Chouinard Tp.	1	4	0	2	1	1	0	2	0.2	0.0	0.0	0.0
786	Windigo	0	1	-	-	-	-	-	-	0.0	0.0	-	-
787	Duplessis	0	1	-	-	-	-	-	-	0.0	0.0	-	-
817	Pontleroy Tp.	-	0	-	-	0	1	-	-	-	-	-	-
822	Darlens Tp.	1	0	1	0	-	-	-	-	1.5	0.0	5.5	0.0
825	Lemoine L.	0	4	1	2	1	3	-	-	0.0	0.0	0.1	0.0
826	Laubanie Tp.	0	1	0	1	0	1	-	-	0.0	0.0	0.0	0.0
828	Sabourin L.	-	1	-	-	0	1	-	-	-	-	-	-
829	Marrias Tp.	1	2	-	-	0	3	-	-	0.1	0.0	-	-
830	Villebon Tp.	1	0	-	-	0	1	-	-	0.5	0.0	-	-
833	Ypres Tp.	1	2	1	2	0	2	-	-	0.1	0.0	0.7	0.4
836	Camachigama	3	0	-	-	2	-	-	-	10.0	4.2	-	-
838	Festubert Tp.	1	0	-	-	-	-	-	-	0.1	0.0	-	-
839	Chouart Tp.	3	0	-	-	-	-	-	-	8.9	0.0	-	-
840	Radisson Tp.	3	0	-	-	-	-	-	-	6.5	2.2	-	-

Summary of Jack Pine Sawfly Sampling 1954-1955 Cont.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
841	Douville Tp.	1	0	1	0	1	0	1	1	13.0	5.5	5.0	-
842	Fortier Tp.	1	0	1	0	1	0	1	1	11.5	3.5	2.0	0.0
843	Fortier Tp.	1	2	1	1	1	0	1	0	0.1	0.1	0.2	0.0
844	Leau Tp.	1	1	1	4	0	5	1	4	1.2	0.2	-	-
845	Timbrell	0	5	0	1	0	3	0	3	0.0	0.0	0.1	0.0
846	Parent	0	3	1	4	0	3	2	4	0.0	0.0	0.0	0.0
847	Dandurand L.	0	4	1	8	0	5	0	8	0.1	0.0	0.1	0.0
848	Casey	1	7	1	7	0	6	0	8	0.1	0.0	0.0	0.0
849	Huot Tp.	2	1	0	4	0	2	0	3	0.1	0.0	0.0	0.0
850	Cann	1	4	0	7	2	2	0	2	0.3	0.0	0.0	0.0
851	Sammaur	2	5	0	3	0	0	0	0	0.5	0.1	0.0	0.0
852	Vandry	3	2	0	2	-	-	-	-	0.0	0.0	-	-
853	Albani Tp.	0	2	-	-	-	-	-	-	0.0	0.0	-	-
854	Ingall Tp.	0	3	-	-	-	-	-	-	0.0	0.0	-	-
856	Papin Tp.	3	0	3	0	-	-	1	2	14.3	0.7	12.0	0.0
889	Caron L.	0	1	-	0	-	-	-	-	0.0	0.0	0.5	0.0
891	Montanier Tp.	0	1	1	0	-	-	-	-	0.0	0.0	0.0	0.0
895	Lemoine L.	0	1	-	0	-	-	-	-	0.0	0.0	0.0	0.0
896	Val d'Or	0	1	0	1	0	1	-	-	-	-	-	-
900	Machi Manitou L.	0	1	-	0	-	0	-	-	0.0	0.0	0.0	0.0
903	Foch Tp.	4	0	2	0	1	0	-	-	-	-	0.0	0.0
904	Petain Tp.	4	0	1	1	2	1	-	-	22.6	2.0	57.7	0.8
908	Capitachouane L.	4	0	2	0	2	-	2	0	4.3	0.4	4.5	0.0
909	Monet	2	0	2	0	2	-	2	0	4.5	0.5	6.7	0.0
910	Clova	0	1	0	0	1	0	-	-	0.0	0.0	26.2	0.0
912	Montpetit Tp.	1	0	-	-	0	-	-	-	0.0	0.0	-	-
914	Tasse Tp.	0	1	0	-	0	2	1	1	0.5	0.5	0.0	0.0
915	Frechette Tp.	2	2	-	-	0	1	-	-	0.0	0.0	0.0	0.0
920	Grosse Ile L.	2	0	-	1	-	-	-	0	-	-	-	-
925	Trenche Riv.	3	0	2	1	-	2	3	0	0.2	0.0	1.4	0.0
975	Bousquet L.	2	0	1	0	-	2	-	-	14.7	1.8	1.5	0.0
976	Preissac L.	0	0	-	-	-	-	-	-	1.0	0.0	-	-
982	Pascalis L.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
988	Forsythe	0	1	-	-	-	-	-	-	0.0	0.0	-	-
990	Trevet Tp.	-	-	-	-	1	0	-	-	-	-	-	-
991	Langlade	-	-	-	-	1	0	-	-	-	-	-	-

Summary of Jack Pine Sawfly Sampling 1954-1955 Cont.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
992	Bourgmont L.	2	0	2	0	2	0	0	2	2.0	0.0	13.5	0.0
993	Monet	0	2	2	0	1	1	2	0	0.0	0.0	10.0	0.0
999	Delage L.	0	2	-	-	-	-	-	-	0.0	0.0	-	-
1000	Delage L.	0	2	-	-	0	1	-	-	0.0	0.0	-	-
1003	Bourassa Tp.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1004	Bonin Tp.	0	2	-	-	-	-	-	-	0.0	0.0	-	-
1007	Pierriche Riv.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1058	D'Alembert Riv.	0	2	-	-	1	1	-	-	0.0	0.0	-	-
1069	Senneterre	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1081	Gouin Reservoir	-	-	1	0	-	-	-	-	-	-	0.5	0.0
1085	Gouin Reservoir	-	-	-	-	-	1	-	-	-	-	-	-
1086	Gouin Reservoir	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1089	Wabano Riv.	0	2	-	-	-	-	-	-	0.0	0.0	-	-
1093	Trenche Riv.	-	-	0	1	-	-	-	-	-	-	-	-
1094	Trenche Riv.	0	2	0	1	-	-	0	1	0.0	0.0	0.0	0.0
1095	Trenche Riv.	0	8	0	3	-	-	2	2	0.0	0.0	0.0	0.0
1096	Trenche Riv.	0	6	0	3	-	-	1	2	0.0	0.0	0.0	0.0
1097	Ross Tp.	0	4	0	2	-	-	1	1	0.0	0.0	0.0	0.0
1156	Ducros Tp.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1175	Faguy Tp.	0	2	-	-	-	-	-	-	0.0	0.0	-	-
1176	Lafitau Tp.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1181	Rainbow Riv.	2	4	0	2	-	-	0	3	0.3	0.0	0.0	0.0
1260	Berlinguet L.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
1266	Paquet Tp.	1	1	0	1	-	-	0	1	0.5	0.0	0.0	0.0
1343	Normandin L.	0	1	-	-	-	-	-	-	0.0	0.0	-	-
		<u>243</u>	<u>178</u>	<u>145</u>	<u>121</u>	<u>138</u>	<u>136</u>	<u>74</u>	<u>82</u>				