

**SUMMARY OF FOREST INSECT
AND DISEASE CONDITIONS
NEWFOUNDLAND
SPRING TO MID-SUMMER, 1968**

LIBRARY
AUG 26 1968
CANADA
DEPT. OF FORESTRY
FREDERICTON, N.B.

**FOREST RESEARCH LABORATORY
ST. JOHN'S, NEWFOUNDLAND
INFORMATION REPORT N-X-17**

**FORESTRY BRANCH
1968**



SUMMARY OF
FOREST INSECT AND DISEASE CONDITIONS
NEWFOUNDLAND
SPRING TO MID-SUMMER, 1968.

by

G.L. Warren, Pritam Singh and L.J. Clarke.

Forest Insect and Disease Survey
Newfoundland Region

FOREST RESEARCH LABORATORY
ST. JOHN'S, NEWFOUNDLAND
INFORMATION REPORT N-X-17

FORESTRY BRANCH

1968

SUMMARY OF FOREST INSECT AND DISEASE CONDITIONS

NEWFOUNDLAND

SPRING TO MID-SUMMER, 1968

INTRODUCTION

Above normal precipitation and below normal temperatures were recorded at Gander International Airport for the month of May and the month of June was the wettest and coldest on record. Although official weather records have not been published for July it is surmised that temperatures were below normal and rainfall above normal to mid-month.

The field season began early in May when technicians classified aphid injury symptoms in three 1-mile by 8-foot plots in the Humber Valley area. Data from these plots will be used to aid in developing a more comprehensive and refined method for interpreting aphid damage from aerial photographs. Balsam woolly aphid population estimates were obtained from counts made on branch samples on fertilized plots at Crabbs River and South Branch. Lime was applied to replicated sub-plots in the fall of 1967 and fertilized in May 1968. Field staff also established a temporary field station at Wiley Brook, Red Indian Lake, for the shrew-larch sawfly studies being conducted under an Extra Mural Grant by Dr. J.R. Bider of Macdonald College.

The normal insect and disease collecting program has been completely subjugated by the hemlock looper chemical control operation. Only 650 insect samples were submitted by the end of July and nearly all of these were collected as part of the looper sampling plan. Disease sampling has been even more severely restricted and less than eighty samples have been collected to date.

The hemlock looper outbreak was the most significant insect condition. Population levels remained high throughout most of the watersheds between Serpentine Lake and the Codroy Valley and new areas were defoliated in central Newfoundland. Birch casebearer damage was widespread and severe throughout

the west coast from the lower Humber Valley to the Codroy Valley. Larvae of the rusty tussock moth were numerous, particularly on birch, throughout the same area.

A prominent disease condition occurred on tamarack throughout the Island. Symptoms of this undetermined disease caused browning of the foliage of shoots and fascicles.

FOREST INSECTS

Eastern Hemlock Looper, Lambdina fiscellaria fiscellaria (Guen.)

Results of extensive aerial surveys in 1967 showed that the hemlock looper had defoliated balsam fir over an estimated 150,000 acres in western, 7,500 acres in central, and 3,500 acres in eastern Newfoundland. Defoliation occurred in most watersheds between Serpentine Lake and the Codroy Valley in the western region; near Badger, Northwest and Southwest Gander River, and Baie D'Espoir of the central region; and at Deer Arm in the eastern region. Intensive ground checks indicated that most population levels were high in many adjacent undefoliated stands creating a highly destructive potential in over 750,000 acres of mature and over-mature balsam fir. Salvage operations were initiated by Bowater's Newfoundland Ltd. in the Crabbs River stands where an estimated 600,000 cords of fir were seriously damaged or killed and the Provincial Government decided to spray about 500,000 acres in the outbreak areas during the summer of 1968.

Field technicians of the Forest Insect and Disease Survey began sampling stands in western Newfoundland in early June of this year to assess looper larval development. An intensive pre-spray survey was started at predetermined sample points on June 27 and aerial spraying with Phosphamidon and Sumithion began on July 7th. Larval counts at most sample points were high, confirming the forecasts made the previous fall. Larval collections were low in the

Bottom Brook and Southwest Brook watersheds indicating that the outbreak had terminated. These areas were excluded from the spray program. No unexpected defoliation occurred in other areas in the west coast outbreak. However, the spray program was adjusted to include new outbreaks in central Newfoundland and expansions of outbreaks reported in 1967.

New outbreaks were found in balsam fir stands from North Twin Lake east to Carmanville, in the area north of the Trans Canada Highway. New outbreaks were also found in stands south of Gander Lake, from Gambo to the Baie D'Espoir Road; and from West Pond to Burnt Berry Brook in the Halls Bay area. Increased areas of defoliation were found in the previously designated outbreaks in the Northwest and Southwest Gander river areas, and the Badger area between Pamehac Brook and Harpoon Brook.

The most emphatic measure of the effectiveness of the chemical control program will be illustrated by a reduction or complete suppression of defoliation. However, appraisal of defoliation cannot be undertaken until late August when all feeding should be completed. Meanwhile, results of limited post-spray sampling indicate more than 95% larval kill in the more heavily infested areas. A full report on the status of the hemlock looper in Newfoundland will be produced at the completion of seasonal work.

Spruce budworm, Choristoneura fumiferana (Clem.)

Spruce budworm population levels were highest since 1962. More than 40 larvae per tree were collected from coastal stands of white spruce at St. Andrews, Jeffreys, St. Davids and Heatherton. Few larvae were collected from balsam fir in the hemlock looper infestation throughout western and central Newfoundland.

Rusty tussock moth, Orgyia antiqua (Linn.)

Larvae of the rusty tussock moth were numerous in all areas sampled in western and central Newfoundland. It was most common on white birch but was also found on many species of trees and shrubs. This is the second consecutive year that this species has occurred in outbreak numbers. As indicated in last year's records, outbreaks of this insect appear to coincide with those of the hemlock looper.

Birch casebearer, Coleophora fuscedinella (Zell.)

Leaf browning, caused by the birch casebearer, was recorded on immature and mature birch stands throughout western Newfoundland from Doyle's to Cormack. The most severe damage was recorded at Doyle's, South Branch, Crabbs River to Fishels Brook, Barachois Pond Provincial Park, Harrys River to Georges Lake. Patches of moderate to severe defoliation were recorded for the first time in the lower Humber Valley. These latter stands have only been infested for about 3 years and are within 35 miles of the present northern boundary of the outbreak.

An insect, tentatively identified as birch casebearer, was collected near Lloyd's Lake. This is the first record of this insect east of the Long Range Mountains.

Satin moth, Stilpnotia salicis (L.)

Satin moth larve caused light to moderate damage to ornamentals in the Corner Brook area. This same area was severely defoliated in 1967.

Natural stands of trembling aspen were completely defoliated in the South Pond-Halls Bay area to North Twin Lake and in aspen stands along Noel Paul and Harpoon brooks and the Exploits River watershed.

FOREST DISEASES

The most noteworthy disease condition recorded to date has been the widespread occurrence of a browning of the needles of shoots and fascicles of tamarack. The cause of this disorder has not been determined.

The most severe browning was recorded from stands 10 miles along the T.C.H. from Barry Brook to Fishels Brook, headwaters of the Gander River, Gander Bay South, and at Cochrane Pond Provincial Park.

Leaf and Twig Blight of Poplar, Pollaccia radiosa (Lib.) Bald. & Cif. and P. elegans Serv. This disease is quite common on the regenerating aspen in the Gambo Lake area, all along the North Pond road.

Black Knot of Pin Cherry, Dibotryon morbosum (Schw.) Theiss and Syd. This is very severe on pin cherry in the wood roads in Gambo Lake area and along North Pond road, and in Glenwood forest area. New infection seems quite apparent on several shoots in these localities.