FOREST INSECT AND DISEASE CONDITIONS

ALBERTA-NORTHWEST TERRITORIES REGION

by

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CALGARY, ALBERTA

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DEPARTMENT OF FORESTRY

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SUMMARY REPORT

Forest Insect and Disease Conditions

Alberta-Northwest Territories Region

July 15, 1965.

INTRODUCTION

The following is a summary of forest insect and disease conditions as reported by field personnel of the Forest Insect and Disease Survey to July 15. A further summary will be published at the close of the field season. The winter of 1964-65 was exceptionally severe throughout most of the Region, followed by cool, wet weather in spring and early summer. As a result, weather damage to ornamental, shelterbelt and native trees and shrubs was extensive and their seasonal development was delayed at least two weeks.

A major re-assignment of district responsibilities was carried out in 1964. District assignments and divisional responsibilities are as follows:-

Southern Division

Supervisor - V. B. Patterson

Crowsnest-Bow River	N. W. Wilkinson, 981 Northmount Drive, Calgary, Alberta.
Clearwater	G. J. Smith, Box 957, Rocky Mountain House, Alberta.
National Parks	V. B. Patterson, Box 1017, Banff, Alberta.

Central Division

Supervisor - F. J. Emond

Brazeau-Athabasca	F. J. Emond, Box 715, Hinton, Alberta.
Lac La Biche	R. W. Barry, Box 375, Lac La Biche, Alberta.

Northern Division

Supervisor - J. Petty

Slave Lake-Grande Prairie	J. Petty, 10711 - 97th St. Grande Prairie, Alberta.

Peace River	C. R. Layton, Box 114, Peace River, Alberta.
Northwest Territories	E. J. Gautreau, General Delivery, Hay River, N.W.T.

FOREST INSECTS

Spruce Budworm, Choristoneura fumiferana (Clem.)

Spruce budworm outbreaks in Northern Alberta and the Northwest Territories increased in extent and severity in 1965. A number of new infestations were found and larvae were collected for the first time from many widespread points as far south as the Parkland Region. Damage appraisals, initiated in 1964 with the establishment of two permanent sample plots on the Mackenzie River were extended to the Slave River outbreak with the establishment of two permanent plots and six temporary plots.

The outbreak along the Slave River extended for 171 miles, from Fort Smith to Nagel Channel, a considerable increase over 1964. Defoliation was characteristically patchy light to severe throughout. The most severe defoliation occurred on Sawmill Island, from mile 345 to 351, around mile 363, at Brulé Point, from mile 399 to 400, near mile 404, and on Long and McConnell Islands. Considerable mortality and top-killing was noted between mile 348 and 351, around mile 363, near Pointe Enneyeuse and on Long Island.

The Mackenzie River outbreak extended from the mouth of the Horn River to the mouth of the Redstone River, a distance of about 360 miles. Although the infestation was not continuous, most spruce stands along the Mackenzie and the lower portion of its tributaries sustained some degree of defoliation. Severe defoliation occurred around the mouth of the Horn River and upstream for an undetermined distance, up the Spence River for 10 miles, upstream along the Rabbitskin River for 30 miles and north to the Horn Mountains, south of Fort Simpson, and for 16 miles along the Martin River. Moderate defoliation occurred extensively between Morrisey Creek and Trout River, near Jean Marie Creek, from Barrans Landing to Camsell Bend, from the Marten Hills to the MacKenzie River, from the mouth of Trail River to the Ebbutt Hills and up the Willow River to Gun Rapids.

Moderate defoliation occurred along the Liard River from the airport to Fort Simpson to 10 miles north of the Poplar River. No defoliation was observed from the Poplar River to Fort Liard. The small infestation along the Hay River persisted from Louise Falls to a point about 16 miles downstream; defoliation was predominantly light.

The Wabasca River outbreak in northern Alberta has not been surveyed to date. An aerial survey is planned for early July and a damage appraisal for late September. Little change was noted in the small outbreak that has persisted around Loon Lake for a number of years. Light to moderate defoliation extended along the Redearth Road from mile 47 to mile 52. Dead tops on many spruce trees in the area indicate heavy defoliation in past years.

Previously unreported infestations of spruce budworm were found between mile 19.5 and mile 27 on the Habay Trail northwest of High Level, in township 109, southwest of High Level and 12 miles south and $3\frac{1}{2}$ miles west of Keg River. In all three areas, defoliation was light.

As 1964 was a flight year for the two-year-cycle spruce budworm in the National Parks, consequently, larvae were in early instars and little damage was reported. Some extension of the Saskatchewan Crossing infestation in Banff National Park was noted. In Jasper National Park, numerous larvae were found in spruce trees growing at the mouth of the Snake Indian River.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Moderate to severe defoliation of aspen by the forest tent caterpillar was limited to scattered patches in central Alberta in 1965. This marks the near complete collapse of the recent outbreak which covered about 75,000 square miles at its peak in 1962. The most severe defoliation occurred within a 40 mile radius of Lake Wabamun where moderate to severe defoliation extended over an area of about 250 square miles in aggregate and northwest and southeast of the Saddle Lake Indian Reserve where patches of aspen totaling about 100 square miles in extent suffered similar defoliation.

Elsewhere in Central Alberta light defoliation was reported from many points within the limits of the 1964 outbreak. Field studies carried out during the early spring revealed a near normal hatch followed by high larvae mortality in early instars; high parasite populations and unfavorable weather were believed partly responsible.

Poplar serpentine miner, Phyllocnistis populiella Cham.

Infestations of this miner persisted in poplar stands in many areas in Western Alberta and in the Northwest Territories. In the National Parks, leaf damage was severe around Radium in Kootenay National Park and adjacent to the Ottertail Warden Station

in Yoho National Park. Moderate damage occurred in the Bow Valley between Banff and Mount Eisenhower in Banff National Park. In northern Alberta, moderate to severe damage was reported from the High Level - Meander River Area. In the Northwest Territories moderate to severe leaf mining was observed in the Mackenzie Valley from Mills Lake to Fort Norman, along the Liard Valley from the Matau River to the British Columbia Border, and for about 50 miles upstream from the mouth of the South Nahanni River. Light to moderate damage occurred along the Liard Valley from the Manner River to the Poplar River, up the North Nahanni Valley to Carlsons Lake and along the Blackwater Valley from the Mackenzie River to Blackwater Lake.

Leaf Blotch miner, Lyonetia spp.

This leaf miner caused severe browning of willow foliage in many areas in northern Alberta and the Northwest Territories in 1965. Patches of severe damage occurred throughout much of the surveyed portions of the Footner Forest in northwestern Alberta. In the Northwest Territories, infestations of varying intensity were found along the Mackenzie Valley from Fort Providence to Wrigley, in the Liard Valley from Fort Simpson to Fort Liard, along the Mackenzie Highway from the Alberta boundary to Enterprise, along the Slave River and around Carlsons Landing and Peace Point.

OTHER NOTEWORTHY INSECTS

Insect	Host	Remarks
Fall Cankerworm Alsophila pometaria (Harr.)	M. maple	Distribution in southern Alberta similar to 1964 but numbers considerably reduced.
Linden looper Erannis tiliaria (Harr.)	M. maple	Completely defoliated 100 acres of Manitoba maple east of Medicine Hat.

Insect	Host	Remarks
Needle miner, *Evagora biopes* Free.	Lp. pine	Infestation in Cypress Hills active with population somewhat reduced from 1964. Investigations indicate probable 1 year life-cycle.
Grey willow leaf beetle, *Galerucella decora* Say	Poplar Willow	Populations down from 1964. Light damage to willow widespread in central and northern Alberta.
Aspen leaf beetle, *Gonioctena americana* (Schaeff.)	T. Aspen	Caused moderate to severe damage to aspen foliage at scattered points in west-central Alberta.
Larch sawfly, *Pristiphora erichsonii* (Htg.)	Tamarack	Preliminary reports indicate continued decline in populations through the Region.

DISEASE CONDITIONS

Shoestring root rot, *Armillaria mellea* (Vahl. ex Fr.) Quél

A number of previously unreported outbreaks of this disease were found in the Clearwater Forest in 1965. Severe

damage was found in regeneration lodgepole pine on burned-over areas west of Ricinus, northwest of Nordegg and south of the Baptiste River along the road to the O'Chiese Indian Reserve. In the Parker Creek area, about 6 miles southeast of the James River Ranger Station, mature pine were heavily attacked over approximately 600 acres. A preliminary examination revealed mortality of around 80 per cent. It is believed that the infected stand may have been pre-disposed to attack by repeated "red belting." More detailed examinations of these areas will be carried out at a later date.

Weather damage.

The severe winter of 1964-65 combined with late spring frosts caused extensive damage to many aspen stands from southern Alberta to Wood Buffalo National Park. Aspen bluffs in the Parkland Region, already in poor condition as a result of a recent drought were severely damaged by winter top killing and by high winds and low temperatures which occurred during a storm on May 23. Early June frosts caused severe foliage damage to aspen in Wood Buffalo National Park. By mid-June, foliage had taken on a brown appearance. Balsam poplar willow and alder were also affected but to a lesser extent. Clumping of aspen foliage and late leafing was widespread from the Cypress Hills to Peace River. Climatic damage to lodgepole pine in the form of "red belt" was widespread and severe in many areas along the foothills from Waterton Lake to Nose Mountain south of Grande Prairie. Severe "red belt" also occurred along the slopes of many mountain ranges west of the Liard River. Some mortality was evident in areas where similar damage had occurred in previous years.

Foliage diseases of Conifers.

Field reports received to date indicate that many species of needle rusts and needle casts will be more widespread and severe than in the past few years. Warm damp weather during June and early July provided good conditions for the germination and development of these organisms. While it is too early in the season to report the extent of damage or to provide accurate identifications, reports of foliage damage to pine by Elytroderma and Hypodermella needle casts, Chrysomyxa spruce needle rusts and Pucciniastrum fir needle rusts have been received from many areas throughout the Region. A more complete report on these diseases will be contained in the September 15 report.

Ink spot of poplar, Ciborinia whetzelii (Seav.) Seav.

This disease is more widespread and severe in this year than in 1964. Varying degrees of damage have been reported from many areas of the Province. The most severe damage reported to date has occurred in the Clearwater Forest where a severe infection occurred northwest of Rocky Mountain House along the O'Chiese Indian Reserve road, in the Slave Lake Forest where moderate to severe damage to aspen foliage was reported along the Redearth Road west of Whitefish and south of Clear Prairie.

OTHER NOTEWORTHY DISEASES

Casual Agent	Host	Remarks
Needle rust of pine, Coleosporium asterum (Diet.)Syd.	Aster	Collected at mile 109.5 on the Mackenzie Highway on Aster, new northern extension record.
Comandra blister rust, Cronartium comandrae Pk.	J. pine	Causing light mortality to Jack pine at mile 105 on the Mackenzie Highway. A study plot was established here to determine rate of spread etc.
Poplar leaf spot, Marssonina tremuloidis (Ell. & Ev.) Kleb	T. aspen	Caused severe damage to aspen foliage at a number of locations in the Peace River Forest.

Casual Agent	Host	Remarks
Aspen shoot blight, Pollaccia radiosa (Lib.) Bald. & Clif.	T. aspen	Commonly found on regeneration aspen throughout west-central Alberta, particularly in the Entrance-Brulé Robb area.

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