

FOREST INSECTS AND DISEASES IN EIGHT  
OF THE WESTERN CANADIAN NATIONAL PARKS

1971

by

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ABSTRACT

No major infestations of forest insects or annual diseases were recorded in any of the parks during 1971, with the exception of the large aspen tortrix and the spruce budworm. The widespread infestation of the large aspen tortrix that occurred in Riding Mountain National Park in 1970 had decreased considerably by 1971, but patchy defoliation still occurred in several areas. Some defoliation by this insect was also noted in Prince Albert National Park. Spruce budworm infestations were severe in a localized area of Kootenay National Park, and infestations persist in parts of Banff National Park. Low populations of the spruce budworm were also noted at several areas in Wood Buffalo National Park. Several other insect pests and diseases were also noted in the various parks. These are discussed separately for each of the eight parks covered.

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## INTRODUCTION

The Forest Insect and Disease Survey operated by the Canadian Forestry Service conducts annual surveys to determine the abundance of forest insects and diseases. In the past, we have presented the results of these surveys in an annual report covering a number of ranger districts. No attempt has been made to report on conditions in specific areas such as national parks. Consequently, information concerning parks has been mixed with other information pertaining to each ranger's district.

To facilitate the extraction of information on current insect and disease conditions in the national parks in our region, we have summarized insect and disease conditions during 1971 for each of the parks examined (Riding Mountain, Prince Albert, Waterton, Banff, Kootenay, Yoho, Jasper, and Wood Buffalo). We did not survey Elk Island, Glacier, or Revelstoke parks during 1971.

The surveys were conducted by experienced field technicians, who recorded any insect or disease problems encountered while traveling in the parks. Whenever unusual conditions were noted, examinations were made to determine the causal organism. Occasionally, as with the large aspen tortrix in Riding Mountain National Park, aircraft were used to map the boundaries of infestations of defoliating insects. The technicians then collated their information for each of the eight parks examined. No major insect or disease problems were found in any of these parks during 1971. The large aspen tortrix, a

defoliator of aspen, was very widespread in Riding Mountain National Park the previous year. Defoliation by this insect was much less noticeable in 1971, but patches of defoliation still occurred in several areas of the Riding Mountain National Park, and some new infestations were noted in the Prince Albert National Park. The two-year cycle spruce budworm population was high at one locality in Kootenay National Park, and infestations also persisted in parts of Banff National Park. Low populations of spruce budworm were reported from several areas in Wood Buffalo National Park. Several other insect and disease pests were noted in one or more of the parks, and are discussed separately for each of the eight parks.

RIDING MOUNTAIN NATIONAL PARK

Large Aspen Tortrix, Choristoneura conflictana (Wlk.)

An aerial survey was conducted over Riding Mountain National Park on June 29. The survey showed that infestations declined markedly in the eastern portion of the Park where, in 1970, defoliation was severe and widespread. High population areas shifted this year to the southern and western portions of the Park.

Numerous small areas of moderate to severe defoliation occurred north of Clear Lake and in the vicinities of Round, Audy, Long, Whitewater, Gardiner, and Baldy lakes. Some comparatively large areas of moderate to severe defoliation were mapped north of McArthur Lake, east of Spruce Lake, and southwest of Moose Lake. Some isolated pockets of moderate to severe defoliation were also observed near Deep, Tilson, Edwards, Elk and Spruce Island lakes and south of Sugarloaf and Vermilion River warden stations. Scattered light infestations were common throughout the Park generally.

Yellow-headed spruce sawfly, Pikonema alaskensis (Roh.)

A number of young planted spruce were moderately to severely defoliated near the entrance to the Wasagaming Campground. Light to moderate defoliation of scattered young trees was likewise noted near the north end of Clear Lake and along the east side of Audy Lake.

Leaf and twig blight of poplar, Venturia macularis (Fr.) E. Muell  
& V. Arx

Some small patches of moderately to severely infested regeneration and saplings noted along Highway #10 and along the Audy and Norgate roads.

White pine weevil, Pissodes strobi (Peck)

Low incidence of infested white spruce sapling tops common in the Audy Lake area and north of Wasagaming.

Forest tent caterpillar, Malacosoma disstria (Hbn.)

Although populations remained low, larvae were more common than last year in the Wasagaming area and along the Norgate Road.

Ugly nest caterpillar, Archips cerasivoranus (Fitch)

Widely scattered, isolated nests observed on chokecherry throughout the park.

Spruce budworm, Choristoneura fumiferana (Clem.)

A few larvae were found on white spruce north of Clear Lake but no significant damage was observed.

American aspen beetle, Gonioctena americana (Schaefer.)

Some light defoliation of fringe trees and regeneration of trembling aspen noted at scattered points throughout the park.

Prairie tent caterpillar, Malacosoma californicum lutescens (N. & D.)

Widely scattered, isolated tents were observed on choke-cherry through the park.

Spiny elm caterpillar, Nymphalis antiopa (L.)

A few moderately defoliated trembling aspen saplings were observed along the Norgate Road.

Pine needle rust, Coleosporium asterum (Diet.) Syd.

Scattered light needle infections were common in the Rolling River area.

Leaf rust, Puccinia coronata Cda.

Moderate leaf infections of buckthorn occurred in patches along Norgate Road.



PRINCE ALBERT NATIONAL PARK

Large Aspen Tortrix, Choristoneura conflictana (Wlk.)

Although populations of most insects were at endemic levels throughout the accessible areas of the park, an aerial survey indicated that the large aspen tortrix caused moderate defoliation on a few small areas of trembling aspen from the east side of Crean Lake north to Cheeyas Lake. This infestation is an extension of the moderate to severe defoliation recorded along the east and southeast slopes of the Thunder Hills (west of Montreal Lake).

A Leaf Spot, Linospora tetraspora Thompson

The only noteworthy disease was this leaf spot on balsam poplar. An extensive area of moderate to severe infection was recorded from the buffalo paddock to the First Narrows road.

WATERTON LAKES NATIONAL PARK

Ugly Nest Caterpillar, Archips cerasivoranus (Fitch)

Populations of these tent-making insects were high along Pass Creek Road on chokecherry. More than 100 tents were observed along the immediate roadside but defoliation was not significant.

Spruce Beetle, Dendroctonus rufipennis (Kirby)

In the previously attacked overmature spruce stands examined, no recently attacked standing trees were observed, although low populations were present in windfallen trees and a few standing trees that were killed by 1970 attack.

Pine Needle Scale, Phenacaspis pinifoliae (Fitch)

A light infestation persists in lodgepole pine near Crandell Mountain Campground.

Shoestring Root Rot, Armillaria mellea (Vahl ex Fr.) Quel.

Recently killed conifers were common along the Pass Creek Valley and Cameron Creek Valley.

Whitepine Blister Rust, Cronartium ribicola J.C. Fisher

Whitebark pine was very severely infected along the trail to Castle Pass and on the slopes of Avion Ridge. Considerable branch mortality was evident in this area.

Black Knot of Cherry, Apiosporina morbosa (Schw.) Arx

Chokecherry in the Golf Course area and along Pass Creek Road was severely infected and considerable mortality was evident.

Indian Paint Fungus, Echinodontium tinctorium Ell. & Ev.

A high percentage of the living mature alpine fir along Bauerman Brook has decayed heartwood caused by this organism.

Red Ring Rot, Fomes pini (Thore ex Pers.) Lloyd

This decay organism has caused considerable heart rot in standing living overmature spruce in the valley bottoms along the creeks in the west side of the Park.

Hypoxylon Canker, Hypoxylon mammatum (Wahl.) Miller

Numerous stem cankers were observed on trembling aspen in exposed sites along the slopes of Bellevue Hill. Considerable tree mortality has occurred in open stands.

Needle Blight, Isthmiella quadrispora Ziller

This fungus caused considerable foliage discoloration of alpine fir in the Bauerman Brook Valley.

Climatic Damage

Winter damage to conifers was severe at high elevations along the Pass Creek and Cameron Creek valleys for the second consecutive year. Reddish-colored foliage is the main symptom of this type of damage.

BANFF NATIONAL PARK

Spruce budworm, Choristoneura biennis Free.

Populations of this 2-year cycle budworm persist in stands of Englemann spruce and fir along the lower slopes of Mt. Murchison near Saskatchewan Crossing. 1971 was a non-flight year and consequently damage to new foliage by early instar larvae was very light.

Lodgepole needle miner, Coleotechnites starki Free.

Partially mined needles of lodgepole pine were numerous along both slopes of the Bow River Valley between Mt. Norquay and Mt. Eisenhower. Larvae were in the first year of a 2-year cycle and as a result foliage discoloration was not discernable.

Spruce beetle, Dendroctonus rufipennis (Kirby)

Along Boom Creek Valley in a stand of overmature Englemann spruce these bark beetles appear to be maintaining an even population level. In a 3-mile long traverse of the area seven trees had 1971 strip attack and small 1st and 2nd instar larvae were present. Several trees, attacked in 1970, had populations of full grown larvae and teneral adults. Two trees were noted which showed evidence of complete girdling.

Poplar leaf spot, Drepanopeziza populorum (Desm.) Hoehn.

Groups of aspen poplar in Tunnel Mountain and Johnston Canyon camp grounds were moderately to severely infected with this leaf spot.

Climatic

Notable mortality of Engelmann spruce seedlings occurred along the highway right-of-way on Mt. Murchison.

KOOTENAY NATIONAL PARK

Spruce budworm, Choristoneura biennis Free.

High larval populations were present in spruce-fir stands along the Vermilion River Valley between Ochre Creek and Vermilion Crossing. A high percentage of the current years foliage of the alpine fir and spruce was affected which resulted in notable stand discoloration. The most severe injury was in the Numa Creek area.

If the present larval population overwinters successfully, severe defoliation can be expected in the area in 1972.

Douglas fir beetle, Dendroctonus pseudotsugae Hopk.

The continued presence of this species of bark beetle within the Park was evidenced by the finding of a heavily infested living Douglas fir along the Cross River Fire Road.

Pine needle cast, Lophodermella concolor (Dearn.) Darker

Caused severe discoloration and loss of foliage of lodge-pole pine along lower part of the Kootenay River within the Park.

YOHO NATIONAL PARK

Spruce beetle, Dendroctonus rufipennis (Kirby)

The previously reported infestation of spruce beetle in the upper Amiskimi River Valley was burned out by a forest fire this past summer. No recent attacks were noted on fire weakened fringe trees.

Pine needle cast, Gloeocoryneum cinereum (Dearn.) Weindlmayr

This needle cast caused severe discoloration of lodgepole foliage along the lower end of the Amiskimi River Valley.

JASPER NATIONAL PARK

Yellow-headed spruce sawfly, Pikonema alaskensis (Roh.)

Ligh defoliation of open grown white spruce caused by this sawfly was noted near the junction of Highway 16 and Celestine Lake Road.

Poplar serpentine miner, Phyllocnistis populiella Cham.

Low populations were present in aspen throughout the Park.

Dwarf mistletoe, Arceuthobium americanum Nutt. ex Engelm.

Dwarf mistletoe caused mortality of numerous lodgepole pine in the area of the Jasper air strip and severe branch mortality and some tree mortality in the townsite.

Pine needle cast, Elytroderma deformans (Weir) Darker

A high rate of infection was recorded in stands of lodgepole pine from Jasper south to Athabasca Falls.

Climatic

Severe red belt damage occurred in several locations in the Park. Notable browning of foliage of conifers was recorded in the following areas: along the Maligne Range from below Tekarra Mountain to Mt. Hardisty; on the west side of Signal Mountain, along the Pallisades for 4 miles, along Colin Ridge above Jasper air field, in small patches above Cold Sulphur Spring, in a draw behind Morrow Peak, along Ashler Ridge for 3 1/2 to 4 miles and along Mt. Fryatt south of Athabasca Falls.



WOOD BUFFALO NATIONAL PARK

Black-headed budworm, Acleris variana (Fern.)

Low populations were found in association with spruce budworm at Little Buffalo Falls.

Spruce budworm, Choristoneura fumiferana (Clem.)

Infestations of spruce budworm remained much the same as in 1970. Low populations were reported from the following areas: from Pine Lake south for 8 miles, Carlson's Landing to Peace Point, Fort Smith area, and at Little Buffalo Falls.

Larch sawfly, Pristiphora erichsonii (Htg.)

Low populations were common in stands of tamarack bordering Highway 5 within the Park.

Poplar serpentine miner, Phyllocnistis populiella Chamb.

Aspen poplar supported high populations of leaf miner in the following areas: Pine Lake, between Carlson's Landing and Peace Point, north of Carlson's Landing to Fort Smith and along Highway 5 within the Park.

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