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ANNUAL DISTRICT REPORT
FOREST INSECT AND DISEASE SURVEY
BRITISH COLUMBIA, 1977

YUKON TERRITORY

by
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CANADIAN FORESTRY SERVICE
VICTORIA, BRITISH COLUMBIA
--FILE REPORT--

DEPARTMENT OF ENVIRONMENT

December, 1977

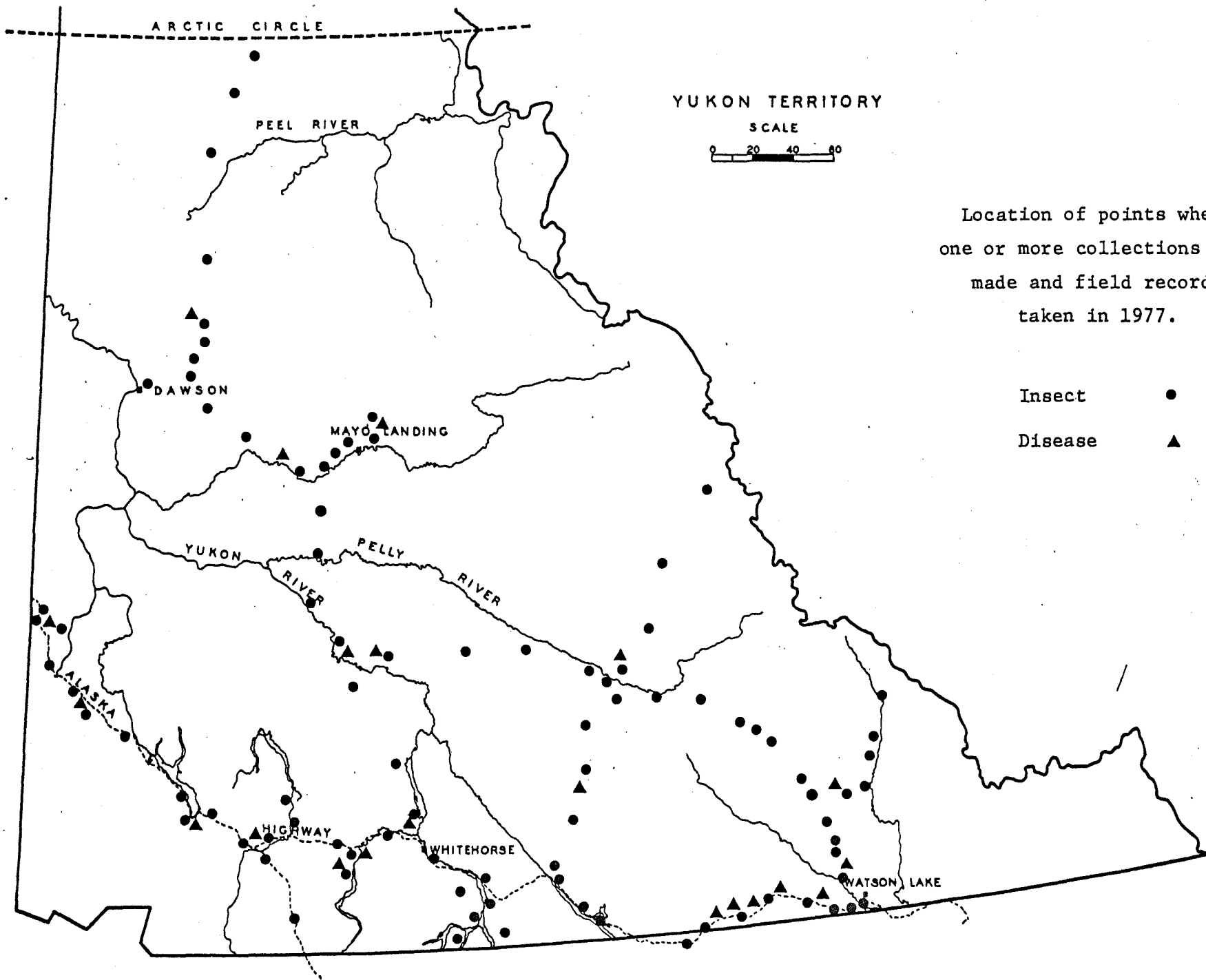
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INTRODUCTION

This file report outlines the status of forest insect and disease conditions in the Yukon Forest District for 1977, emphasizing pests capable of sudden, damaging outbreaks.

Regular field work in the District commenced on June 24 and terminated on July 23. A total of 94 insect and 22 disease collections were taken in 1977. Collection localities are shown on Map 1. The number of collections containing defoliating larvae increased to 74% in 1977 from 49% in 1976. There was spruce beetle activity in the Haines Junction area. Larch budmoth defoliation continued north of Watson Lake.

A needle blight was responsible for extensive defoliation of lodgepole pine near Rancheria. Trembling aspen in many areas was infected by a shoot and leaf blight.



Location of points where
one or more collections were
made and field records
taken in 1977.

Spruce broom rust, *Chrysomyxa arctostaphyli*

The study on volume loss of white and black spruce due to spruce broom rust, which was started in 1976, continued in 1977. Ten additional random locations were sampled, with no attempt being made to locate samples in infected stands, whereas in 1976, locations were chosen to provide a range of infection. Using the 1977 figures, 7.9% of the white and black spruce sampled were infected. Radial increment loss of 20% per year is assumed when three or more brooms are present on a tree; 1.7% of the trees were in this category. Other forms of damage such as dead, broken or multiple tops appeared on 20.7% of the infected trees, as compared to 6.6% of the non-infected trees. Incidence of basal decay varied little between infected and non-infected trees but infection centers are created on the trees as a result of broken tops and branches.

A lodgepole pine needle cast, *Lophodermella montivaga* —

This needle cast caused extensive defoliation of young lodgepole pine in the Rancheria River Valley on approximately 4,800 ha. The main area of infection extended from km 110 to 1148 along the Alaska Highway. Infection incidence ranged from 40% of the trees with 5% intensity to 90% with 85% intensity. The area at km 1140-42 was severely infected in 1976 as well, resulting in almost total foliage loss during these 2 years.

Light infection was also common on young lodgepole pine at km 1070 of the Alaska Highway and along the Campbell Highway to km 96.

A larch budmoth, *Zeiraphera improbana*

Defoliation by the larch budmoth continued in the Hyland River Valley for a third consecutive year. Moderate to severe defoliation extended along Highway 10 from km 80 to 128, where collections averaged 282 larvae. Light defoliation occurred from km 10 to 80. There was only light defoliation along Highway 9 between Watson and Frances lakes, where the most severe defoliation occurred in 1976.

Aspen foliage diseases

Foliage diseases on deciduous trees were common this year, especially in the southern Yukon. An aspen shoot blight, *Venturia tremulae*, was prevalent in the Watson Lake, Frances and Rancheria rivers regions. Primarily young trees were affected. On older aspen, the most common foliage disease was *Marssonina populi*, a leaf and shoot blight, which turned the foliage of aspen brown on a number of .5- to 3-ha patches in the Watson Lake area.

Weather damage

Late spring frost caused distorted foliage and some twig mortality of aspen along the Stewart River from km 27 on Highway 3 to km 354 Highway 2, and along Highway 2 between Stewart Crossing and Carmacks. Trees of all ages on the south and southwest facing slopes were affected. Presumably, the mild winter and early warm spring weather caused the buds to develop too rapidly in the spring, making them vulnerable to late frost.

Flooding damage

Trees were drying out and turning color due to a frozen root system during warm weather. The problem originated from a leakage in the water canal leading to the Aishihik power plant. The leakage continued through the fall and winter, causing a thick build-up of ice on the forest floor; there was still 60 cm of ice at the beginning of July. With the roots unable to absorb moisture to replace the moisture lost in transpiration, the foliage was drying out and turning red. One hundred hectares of white and black spruce were affected. These weakened trees are very attractive to spruce beetle.

Spruce beetle, *Dendroctonus rufipennis*

The spruce beetle population in the Haines Junction District continued a gradual increase. In the Marshall Creek area the average number of attacks per .1 m² of bark on the underside of windfall trees increased to 10 from 6 in 1976. One hundred hectares of white and black spruce weakened by flooding from the Aishihik power project canal are attracting spruce beetle. An average of 6.5 attacks per .1 m² of bark sampled was found near the base of the larger trees.

Due to the mild winter of 1976-77, the overwintering beetle survival was excellent, and would indicate a further increase in the population in 1978.

Large aspen tortrix, *Choristoneura conflictana*

The main concentration of the large aspen tortrix was around Carmacks. Almost total defoliation of aspen occurred in early summer in this area, but by mid-July the trees had refoliated to 40% of their normal foliage. There was also some light feeding at km 345 to 352 along Highway 2.

Some Pests of Current Minor Significance

Pest	Host(s)	Locality	Remarks
<i>Acleris gloverana</i> Western blackheaded budworm	Spruce, white and black	General	Defoliator; 32% of collections positive with average of 2.5 larvae per sample.
<i>Pikonema</i> spp. Spruce sawflies	Spruce, white and black	General	Defoliator; 35% of collections positive with average of 1.3 larvae per sample.
<i>Zeiraphera</i> <i>destitutana</i> A spruce budmoth	Spruce, white and black	Watson Lake	Common in low numbers.
<i>Ceratocystis</i> sp.	Spruce, white	Kusawa Lake	Blue stain fungus causing some tree mortality.
<i>Coniophora puteana</i>	Spruce, white	Kluane Lake	Brown cubical rot; caused some tree mortality.