

# Forest Insect and Disease Conditions

## Prince George Forest Region

British Columbia, 1978

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Pest problems in the Region were: mountain pine beetle around McNaughton Lake and in the Fort St. James area; spruce beetle near Carp, Hodda, Stuart, Trembleur and Nation lakes; larch sawfly west of Prince George; tent caterpillar near McBride. Two-year-cycle spruce budworm populations increased along the Holmes and Bowron rivers and an outbreak of black army cutworm occurred north of Fort St. James.

A leaf and shoot blight affected trembling aspen over a wide area in the western part of the Region. Rust and blight diseases affected alpine fir foliage from MacLeod Lake to MacKenzie.

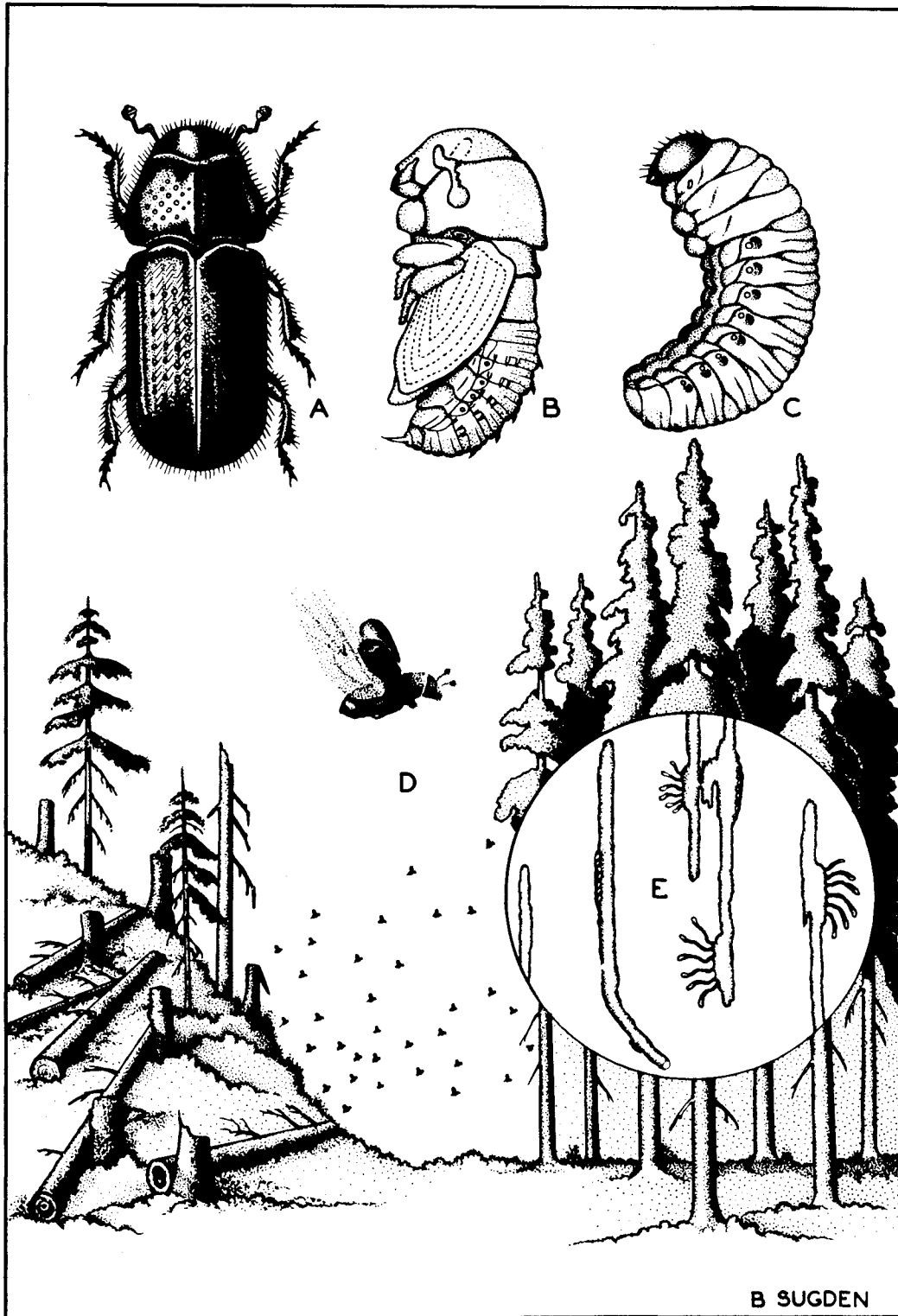


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### SPRUCE BARK BEETLE

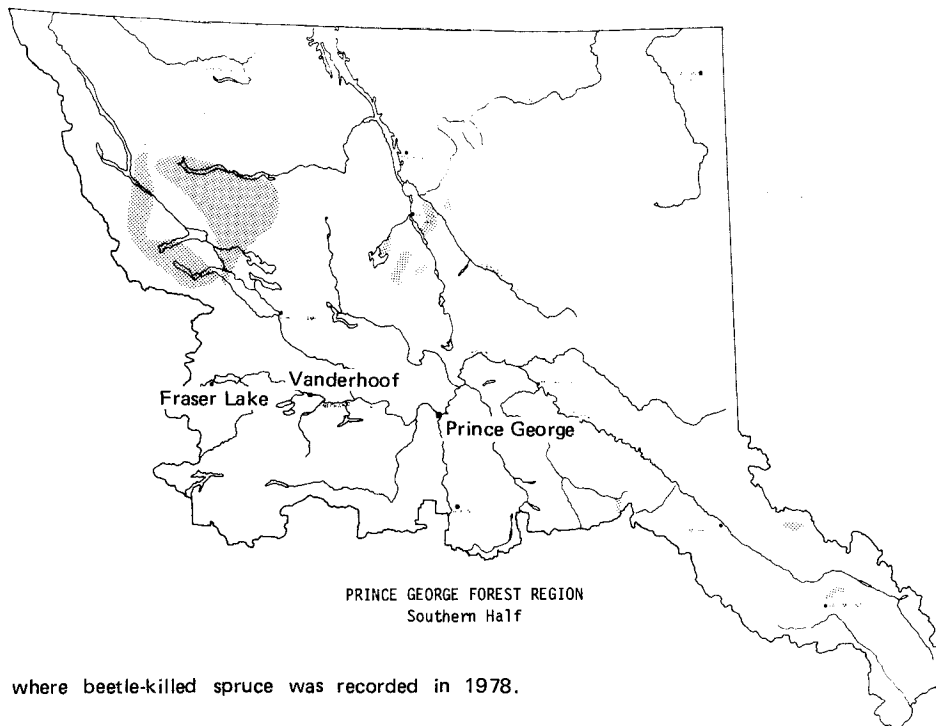
A, adult; B, pupa; C, larva; D, beetles from logging debris and stumps attacking adjacent living trees; E, galleries under bark with eggs and young larvae.

**WHITE SPRUCE TREE MORTALITY CAUSED BY SPRUCE BEETLE, *Dendroctonus rufipennis*,** in 1976 became obvious in 1978 in the Fort St. James and Summit Lake areas. The buildup of beetle populations was attributed to large amounts of blowdown which occurred prior to 1976. Results from cruises in September indicated that current beetle attacks occurred only where there had been extensive tree mortality from 1976 beetle attacks and where blowdown had occurred. At Boomerang Lake, 43% of the spruce trees were healthy, 22% were currently attacked and 35% had been killed by 1977 or earlier attacks. Assessment of beetle brood development indicated that 75% of the population had a 2-year-cycle and the adults will not mature and attack until the spring of 1980. Sal-

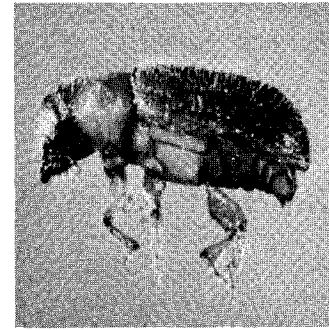
vage logging is being directed into some of the most heavily attacked areas.

Beetle-killed spruce was also recorded in the MacLeod Lake area near Carp, Hodda and Weedon lakes, south of Prince George at Ahbau Lake and near Valemount at Swift River. During aerial surveys in 1978, a total of 38 160 ha of beetle-killed spruce were mapped in the Prince George Region, of which 8 300 ha were in the Fort St. James Ranger District had 29 860 were in the Summit Lake Ranger District.

Indications are that the major threat is over, provided no additional major blowdown occurs. Infested blowdown should be removed before 1980.



Areas where beetle-killed spruce was recorded in 1978.



Adult spruce beetle.

Spruce blowdown is conducive to buildup of bark beetle populations.

**TREE MORTALITY CAUSED BY MOUNTAIN PINE BEETLE, Dendroctonus ponderosae**, continued in 1978. High numbers of red tops were evident at some widely separated locations. There were 1,640 dead pine trees recorded from Ptarmigan Creek north of McBride, south along McNaughton Lake to the Region boundary, and in a newly infested area south of McBride; 125 red tops were observed between Nevin and Horsey creeks. Another 185 pines were killed in the Cunningham-Stuart-Tezzeron-Kazcheck-Tsayata lakes area. An additional 50 dead trees at Nation River brought the Region total to 2,000 red-topped pines in 1978 compared to 2,200 in 1977.

**THE DOUGLAS-FIR BEETLE, Dendroctonus pseudotsugae** has killed several fir trees each year, since about 1973, along Castle Creek near McBride. Several patches of 8 - 10 red-topped Douglas-fir were evident in 1978.

**LARCH SAWFLY, Pristiphora erichsonii**, infestations continued to defoliate tamarack from Bednesti Lake to Tatuk Lake. The distribution pattern of this tree species makes it difficult to measure accurately the extent of damage; from aerial surveys, it was estimated to be 2 500 ha of moderate to severe defoliation.

**INFESTATIONS OF FOREST TENT CATERPILLAR, Malacosoma disstria**, near McBride dropped to the lowest level since 1970. Only 2 100 ha of light defoliation of trembling aspen were mapped, mainly on southwest slopes from McBride to Horsey Creek. Smaller, scattered patches were recorded farther south to Tete Jaune Cache.

**POPULATIONS OF 2-YEAR-CYCLE SPRUCE BUDWORM, *Choristoneura biennis***, increased in 1978, mainly in the Holmes and Bowron rivers drainages, but also extending into Mount Robson Park. Defoliation mapped during aerial surveys in mid-August included: Holmes River- 3 000 ha, Red Pass - 400 ha, Bowron River drainage - 6 420 ha. Most defoliation was light, except for 3 280 ha of moderate in Bowron River drainage.



Larva of 2-year-cycle spruce budworm.

The number of egg masses on branch samples in the Bowron River infestation indicated high populations for 1979; however, it will be 1980 before progeny from these eggs develop into mature larvae which could cause significant loss of foliage.

**THE 1-YEAR-CYCLE SPRUCE BUDWORM, *Choristoneura fumiferana***, populations were very low in the Liard - Smith rivers area and no defoliation is expected there in 1979.



Black army cutworm larvae.

**AN OUTBREAK OF BLACK ARMY CUTWORM, *Actebia fennica***, occurred at Chuchi Lake north of Fort St. James. By late June, the cutworms had severely damaged seedlings over 12 ha. Very few moths were caught in pheromone-baited traps used to determine the adult cutworm population on nearby cutblocks scheduled for planting in 1979. If the insect is present in 1979, the larvae will be active on deciduous growth before the spring snow is gone, and the area should be closely examined before planting.

**LARGE ASPEN TORTRIX, *Choristoneura conflictana***, caused patches of heavy defoliation in trembling aspen stands east of Fort St. John. However this population was very heavily infested with a wide variety of parasitic organisms and little defoliation is expected in 1979.

**PORCUPINES** killed immature lodgepole pines at Chuchi Lake, at the head of Holmes River and at Kiwa Creek. Several hundred trees were killed along the ridge between Williston Lake and Dastaiga Creek.



Trembling aspen stand infested with leaf and shoot blight.

**ASPEN LEAF AND SHOOT BLIGHT**, Venturia macularis, was again widespread in aspen stands in the southern part of the Region. Moderate to severe foliar browning and defoliation occurred from Fraser Lake to Endako. Patchy areas of light to moderate discoloration were recorded between Vanderhoof, Prince George and Summit Lake, and in the east from McBride to Tete Jaune Cache.

**FIR - FIREWEED RUST**, Pucciniastrum epilobii, and a true fir foliage blight, Delphinella abietis, occurred over much of the range of alpine fir in the Region. The former affected from 10-15% of the current year's foliage of trees along the Hart Highway and up to 30% along the Parsnip River. A combination of both diseases killed from 20 to 50% of the current year's foliage of alpine fir from MacLeod Lake to Pine Pass. Scattered areas of infection by D. abietis occurred in the Canoe, MacGregor and Bowron rivers drainage.

**LOGEPOLE PINE NEEDLE BLIGHT**, Scirrhia pini, caused discoloration and mortality of lodgepole pine foliage in the southwestern part of the Prince George Region. Moderate to severe infection occurred near Williston and Bear lakes, and in the Nation, Omineca and Misalinka rivers area. Near Hixon, infection, though patchy, caused a loss of up to 80% of the old foliage of individual trees.

**SPRING FLOODING** appeared to be the major cause of lodgepole pine mortality on 480 ha near Laidman, Johnny and Majuba lakes. A secondary disease, Ceratocystis sp., was present in some samples taken.

STATUS OF FOREST PESTS IN PACIFIC REGION 1978

PEST	FOREST REGIONS						
	PRINCE RUPERT	PRINCE GEORGE	VANCOUVER	CARIBOO	KAMLOOPS	NELSON	YUKON
SPRUCE BEETLE	17 000 ha infestations mainly in the Babine Lake and Morice R. areas	Extensive areas of tree mortality	Localized attacks Mowhokam Cr.	Low population in northeastern corner of Region	Localized infestations, upper Lambly Cr., Lawless Cr., Olivine Cr. Increasing populations in blow down areas	New, spot infestations	Low populations Haines Jct area
MOUNTAIN PINE BEETLE	Widespread infestation, Cedarvale to Smithers	Active in widely separated areas	Infestation declined Klinaklini R. Localized infestations Haylmore and Mowhokam Creeks	Heavy infestation in scattered areas throughout Region	Heavy infestations Trout Cr., Gun Lake area. Increased populations, Below Mission Cr., Stein R. Ashnola R.	Increasing in West Kootenay exploding in East Kootenay	Not found
DOUGLAS-FIR BEETLE	Not found	Low frequency of tree mortality near McBride	Light attacks Fraser Canyon, Silver Skagit, Pemberton	Low population	Increased populations Tranquille Cr. Heffley Cr., Dairy Cr. and along Carpenter L.	Small pockets	No host
WESTERN SPRUCE BUDWORM (1-YEAR-CYCLE)	Low populations	Low populations	Populations declined sharply in many areas of the infestation.	Medium population, lighter than 1977	Significant decrease in most infested areas. Light to moderate populations near Ashcroft	Small populations holding steady	Low population
SPRUCE BUDWORM (2-YEAR-CYCLE)	Low populations	Increasing populations some current defoliation	Not found	Medium to high population, eastern part of Region	Medium population near Lempriere Cr.	Increasing populations	Not found
WESTERN BLACKHEADED BUDWORM	Minor defoliation Bell-Irving R.	Very low populations	Population increase, west coast Vancouver Island	Low population	Very low populations	Low populations	Low population
CONIFER SAWFLIES <i>Neodiprion</i> spp.	Moderate defoliation 1300 ha wH, aIF at Carrigan and Ironside creeks	Infestations subsided	High populations on northern Vancouver Isl.	Low populations	Infestation collapse near Vavenby and Clearwater R.	Low populations	Low population
FOREST TENT CATERPILLAR	Not found	General collapse of infestation	Not found	Not found	Low populations	Low populations	Not found
ASPEN LEAF AND SHOOT BLIGHT	Heavy infection Houston area	Extensive widespread damage	Not found	Light to moderate incidence Big Lake to Canim L.	Severe browning of foliage at Clearwater R. Avola and Monashee Cr.	Widespread light infection of aspen	Low incidence

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