

PEST REPORT

Pacific and Yukon Region • Pacific Forestry Centre • 506 West Burnside Road • Victoria, B.C. • V8Z 1M5

FIDS Pest Report 93-8

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ALPINE FIR MORTALITY IN THE PRINCE GEORGE FOREST DISTRICT

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Scattered alpine fir tree mortality has occurred throughout the Prince George Forest District in 1993.

Single trees and small groups of up to 20 trees of all age classes have been recorded from Stoner north to Bear Lake. The majority of the mortality has been noted in and around the city of Prince George and surrounding farmland. Trees at the fringe of stands or open growing trees are the most affected, though dead understory and mature trees within stands are not uncommon. Trees have been assessed at several sites and it has been concluded that the trees were killed in the fall of 1992 and were basically dead, standing green trees over the winter. The foliage on these trees turned red in the early spring of 1993.

All trees assessed had been attacked by secondary bark beetles, the most common being Pityokteines sp. and Cerambycidae, both of which attack dead, dying and injured trees. A few trees had also been infested by the balsam bark beetle, Dryocoetes confusus, which is a primary killer; but in this instance not the major cause of mortality. No disease conditions were noted that could have contributed to the mortality. The most plausible cause of mortality of these trees is the drought conditions that prevailed in the Prince George area during the growing season, May to August, of 1992 (Table).

Table: Temperature and precipitation figures for the 1992 growing season (May-August) shows normal precipitation and temperature based on 30 year (1951-80) average, records supplied by AES Airport Weather Station, Prince George Airport.

<u>MONTH</u>	<u>TOTAL</u>	<u>NORMAL</u>	<u>DIFFERENCE</u>	<u>(%)</u>	<u>MEAN</u>	<u>NORMAL</u>	<u>DIFFERENCE</u>	<u>(%)</u>
May	24.8	27.4	- 2.6		9.6	9.3	+0.3	
June	39.6	66.9	-27.3		16.6	12.9	+3.7	
July	31.2	59.7	-28.5		16.4	15.1	+1.3	
August	29.2	68.2	-39.0		15.3	14.1	+1.2	
Total/ Avg.	124.8	222.2	97.4	-44%	14.5	12.9	+1.4	+11%

Precipitation was 44% less than normal during those months, and the average temperature was 11% greater. Alpine fir and all other *Abies* spp. are very sensitive to any site disturbance or micro-climate change. The significant moisture deprivation and temperature increases noted above, may have caused considerable stress on alpine fir in the area particularly on well drained sites. The dead balsam trees noted in and around Prince George were probably severely stressed by the drought conditions of 1992; therefore, they became susceptible to attack by the secondary bark beetles.

Forestry Canada's Forest Insect and Disease Survey will continue to monitor the balsam mortality and other pest conditions in the Prince George Forest Region. If you have any further questions please contact Forestry Canada at 363-0600(Victoria) or 963-2213(Prince George).

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