Forestry Canada Forêts Canada

PEST REPORT

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SNOW DAMAGE AND BLOWDOWN IN THE EAST KOOTENAY

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Snow-damaged trees were noted throughout much of the East Kootenay, with some of the most significant damage observed in the Lost Dog, Redding and Bobbie Burns creeks areas. The conditions which led to the extensive damage in the fall of 1990 included a water-saturated soil followed by a heavy, wet snowfall which froze to the crowns of the trees. The excessive weight along with some wind caused the trees to bend, partially uproot or break. Damage was particularly evident in pole-size lodgepole pine stands with less damage in spruce and understory Douglas-fir. Frequently, where whole patches were flattened, a domino effect was initiated around openings or in root rot pockets. The areas affected ranged from damage to 5-60% of trees over 500 ha, to 1-ha patches with 90% of the trees damaged, to scattered groups of less than 10 trees. In one area examined, 70% of the openings originated from root rot trees, mainly Inonotus tomentosus, but Armillaria ostoyae and blackstain root disease, Leptographium wageneri, were also present.

Two significant pest problems which should be taken into account along with considerations for treatment of affected areas:

1) **Beetles** will be attracted to the damaged trees, especially those which are broken 3-7 m above ground, and to leaning or flattened hinge-rooted trees. Of particular importance are the Dendroctonus beetles traditionally attracted to blowdown and stressed trees, spruce beetle and Douglas-fir beetle.

   For spruce beetle, where light scattered blowdown extends over more than five hectares, the potential for a local infestation to develop is high.

   Much of the 1991 Douglas-fir beetle flight was attracted to the snow-damaged trees and, unless these are removed, the current Douglas-fir beetle problem will be increased with the the 1992 flight.

   In damaged pine stands, secondary scolytid species, especially Ips, populations can build up very rapidly and cause considerable additional tree mortality for several years. In addition, local mountain pine beetle infestations have in the past been triggered by extensive areas of this type of snow damage in wetter and cooler ecosystems.

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2) **Root rot** infection levels may also be greatly increased in snow-damaged areas. The main areas of concern are stands in which the roots remain intact and the boles are broken above ground. Most trees within the damaged area can be expected to be invaded by Armillaria root disease within five to ten years. Selectively removing the damaged trees will only leave root rot for future rotations, even where current root rot levels are relatively low. Small clear cut openings, extending beyond where the broken stems occur, will create a buffer and help to confine the root rot centers and reduce the spread rate.

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