

Spruce Beetle

Dendroctonus rufipennis (Kirby)

Coleoptera: Curculionidae

Fiddick, R. L. 1978. Use of felled trap trees as a supplementary technique for reducing spruce beetle infestation. Information Rpt. BC-P-23. Victoria, B. C.: Environment Canada, Forestry Service, Pacific Forest Research Centre; 2 p.

Objective: To describe a method of predicting increased attacks by *D. rufipennis*.

Abstract: Spruce beetle, *Dendroctonus rufipennis* (Kirby), is a serious pest of spruce trees (*Picea* spp.) in North America. Englemann spruce (*Picea engelmannii* Parry ex Engelm.), white spruce [*Picea glauca* (Moench) Voss] and Sitka spruce (*Picea sitchensis* Carr.) are commonly attacked. Large-diameter, mature trees are preferred hosts. The life cycle of *D. rufipennis* typically takes two years to complete, but can be accelerated if summers are long, hot, and dry. Outbreaks of *D. rufipennis* may last 2-5 years and can produce high levels of mortality in mature spruce trees. Felled trap trees can be used to predict an increase in attacks by *D. rufipennis*, especially during hot, dry years that accelerate brood development. If pupae and adults represent >50% of the brood found in 20-25 trap trees, there is an increased chance of *D. rufipennis* attacking more trees the subsequent spring.

Sampling Procedure: Locate and identify infested spruce stands with ground surveys. In the fall, examine brood development on 20-25 spruce trees by removing 0.05 m² of bark on each tree and tallying the percentage of *D. rufipennis* in each life stage present (i.e., larva, pupa, or adult). If pupae and adults represent >50% of the brood present on 20-25 trees, there is an increased chance of more trees being attacked the subsequent spring. Hot, dry summers tend to accelerate beetle development and favor building populations the following year.