

Modelling woodborer damage in recently burned logs, as a function of temperature

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Because of a decrease in timber availability, salvage logging is used to maintain wood supply for the forest industry. In boreal forests, recent burns are the main areas targeted by this strategy. However, the quality of this wood for the sawmill industry is rapidly deteriorated by woodborers. These insects take advantage of the sudden availability of an abundant food resource and their larvae cause damage by burrowing galleries into the wood. These galleries decrease the economic value of wood products. This project aimed to reduce economic losses caused by woodborers, by modeling the seasonal progression of their damage as a function of temperature. We exposed logs of recently burned black spruce (*Picea mariana*) and jack pine (*Pinus banksiana*) to females of the woodborer *Monochamus scutellatus scutellatus* for 48 hours. Then, logs were placed in different temperatures (12, 16, 20, 24 and 28°C) and scanned regularly with an x ray tomograph to monitor larval gallery progression. This was done by reconfiguring three-dimensional images with the MATLAB© software. Our analyses showed a rapid rate of progression of larvae into the logs submitted to high temperatures (24 and 28°C).

Keywords: x ray tomograph, boreal forest, *Monochamus scutellatus scutellatus*, salvage logging, recent burns, larvae damage