Spatial segregation of three longhorned beetles in burned trees of the boreal forest

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In a context of timber's scarcity, post-fire salvage logging is increasingly used to maintain wood volumes needed to support industrial activities. However, if salvage logging is delayed, damage caused by woodborers in recently burned stems may cause considerable economic losses. In this study, we examined the spatial segregation of three major Cerambycid species, *Monochamus scuetellatus scutellatus* Say (whitespotted sawyer), *Acmaeops proteus proteus* Kirby and *Arhopalus foveicollis* Haldeman, in jack pine and black spruce trees across different burn severity (low, moderate & high) in three 2009 burns of northern boreal forest. Four trees with a diameter at breast height ranging between 15 and 20 cm were cut for each treatment (tree species × burn severity) and 30cm logs were collected at different heights along the stem of each tree. Overall, 504 logs were collected and brought to the laboratory where they have been debarked and larvae collected. Result shows that *A. foveicollis* is only present in the lowest log and mainly in lightly burned jack pine, while *A. p. proteus* is found all along the stem in all treatments. The abundance of *M. s. scutellatus* is higher on black spruce and on lightly burned trees. Its abundance decreases from the stump towards the top on spruce while it remains rather constant on pine trees. These estimates of longhorned beetle densities will help to improve salvage logging by directing operations where damages are lower.

Keywords: salvage logging, cerambycidae, boreal forest, forest fires, spatial segregation, longhorned larvae