Occupancy pattern of a long-horned beetle in a variegated forest landscape: linkages between tree quality and forest cover across spatial scales

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 Context: Interactions between landscape-scale processes and fine-grained habitat heterogeneity are usually invoked to explain species occupancy in fragmented landscapes. In variegated landscapes, however, organisms face continuous variation in micro-habitat features, which makes necessary to consider ecologically meaningful estimates of habitat quality at different spatial scales. Objectives: We evaluated the spatial scales at which forest cover and tree quality make the greatest contribution to the occupancy of the long-horned beetle Microplophorus magellanicus (Coleoptera: Cerambycidae) in a variegated forest landscape. Methods: We used averaged data of tree quality (as derived from remote sensing estimates of the decay stage of single trees) and spatially independent pheromone-baited traps to model the occurrence probability as a function of multiple cross-scale combinations between forest cover and tree quality (with scales ranging