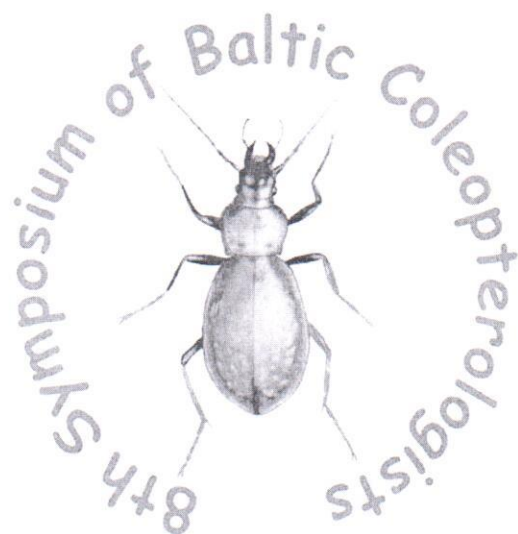


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The diversity and abundance of beetles (Insecta: Coleoptera) in managed and unmanaged mature coniferous forests

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The aim of this study was to disclose the structure of beetle (Coleoptera) communities and compare them in two forests with different status of management. The study was carried out in the coniferous forest (more than 95% consist of *Pinus sylvestris* and *Picea abies*) in the eastern part of Lithuania. One of the forests 65 % of which area was overgrown with trees aged more than 100 years was unmanaged since 1997; the other one was typically managed mature (80-100 years old) forest. The beetles were captured using barrier traps (b.t.) (trap area 0.25 m²) from May till September in 2013 (4 traps for each site). Litter samples (l. s.) (sample area 0.25 m² of litter surface) were taken in winter of 2014 (10 samples per each site). Altogether 1104 specimens (651 by b.t. and 453 in l. s.) from 224 species (169 and 70 respectively) and 40 families were captured. Eighteen species were captured using both methods. The most abundant families by species and (/) specimens numbers in barrier traps were following: Staphylinidae (45/117), Curculionidae (20/74), Elateridae (9/215), Cantharidae (9/34). In litter samples two families were the most numerous: Staphylinidae (35/331) and Carabidae (7/15). The species number as well as number of specimens in barrier traps were significantly higher in the managed forest (the average by 1 trap: 48 (±4.5) for species and 90,6 (±4,7) for individuals) comparing with the unmanaged one (37.4 (±2.9) and 70,4 (±7,8) respectively). The higher number of species and specimens captured by barrier traps in the managed forest apparently was caused by lower density of the woods. However, analysing litter samples no significant differences of these parameters were found. No significant differences were revealed comparing Shanon's indices of species diversity and Pielou's indices of evenness in the two studied sites: in the managed forest - H' 3,48 (±0,19), E 0,89(±0,02) per b. t.; H' 1,98 (±0,12), E 0,9 (±0,02) per l. s.; in the unmanaged - H' 3,26 (±0,2), E 0,89(±0,03) per b. t.; H' 1,88 (±0,11), E 0,82 (±0,04) per l. s. Despite that both study sites were very unique by species composition. Even 54.3% found species were unique for managed woodland and 43.5% for unmanaged forests.