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### Biogeography and Diversity of Ground-Dwelling Arthropods in Farm Woodlands

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## Abstract

The species richness and composition of the ground beetle and spider fauna of twenty-eight farm woods in the Vale of York was sampled. The relationship between species richness and woodland area, isolation and shape was examined. Ground beetle species richness was related to woodland shape, and spider species richness to isolation. If new woodlands are to be created, there appears to be a balance between increasing the total species richness by having long thin woodland belts and increasing the number of characteristic woodland species by having compact woods that maximize the area of core woodland habitat. Comparison of the results from the two faunal groups indicates that it can be dangerous to base an assessment on a single taxonomic group of arthropods.

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**Abstract**—Community of ground dwelling invertebrates in natural pine forest of the city Yekaterinburg and its vicinities was studied. The compared sites were contrast in respect of the urbanization (mainly air pollution) and recreation (the frequency of visits). The abundance of the most numerous taxa (ground and road beetles, spiders, harvestmen) increases in the urban sites as compared of to the rural sites. The results presented in most works on evaluating the abundance and diversity of invertebrates in urban sites are related exclusively to recreation (Galinovskii and Aleksan drovich, 2004; Lehvävirta et al., 2006; Semenova, 2008). However, it is also necessary to take into account other factors determining the overall urban ization effect. Oil mallee farming systems appear beneficial for arthropod conservation in the wheat belt of Western Australia. Our aim was to determine if oil mallee plantings increase the diversity and abundance of ground-dwelling arthropods, especially coleopterans, in a cropping field. We particularly focused on Coleoptera due to their high species richness and ecological (niche) diversity (Grove & Stork, 2000) . We sought to compare both ordinal arthropod and beetle species data from pitfall trapping within four habitat types (wheat field, oil mallee belts, remnant woodland, and remnant roadside vegetation) and to observe temporal variation within these habitats. **2. Materials and Methods.** The phylum Arthropoda contains a wide diversity of animals with hard exoskeletons and jointed appendages. Many familiar species belong to the phylum Arthropoda—insects, spiders, scorpions, centipedes, and millipedes on land; crabs, crayfish,

shrimp, lobsters, and barnacles in water (Fig. 3.72). Arthropods are considered the most successful animals on Earth. The phylum includes more species and more individuals than all other groups of animals combined. Over 85 percent of all known animal species are arthropods (Fig. 3.73). They live in the widest range of habitats and eat the greatest variety