

Ground-dwelling spider fauna in Natural Forest Reserves in Hesse, Germany

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Strict Forest Reserves are forests where no forest operations are carried out. In Hesse (Germany) 31 such reserves have been established, 22 of them with a reference area where forest management is continued. Seven groups of animals (Lumbricidae, Araneae, Heteroptera, Coleoptera, Hymenoptera Aculeata, Macrolepidoptera, Aves) have so far been investigated in eight reserves using a wide range of methods over two whole years (incl. winter). Here, the ground-dwelling spiders of five Strict Forest Reserves in Hesse are determined and analysed.

Data on spiders from pitfall traps are the topic of this talk. About 2/3 of the spider species (>200) were trapped with the pitfalls; a slightly smaller number than with trunk electors (in total > 300 species). In a single beech forest (4 of the 5 areas are beech forests) 26% of the spider species known from Hesse and 18% of the species known from Germany can be found. On average 110 spider species were recorded on the ground in every area.

The spider species are categorised according to their degree of affiliation to forests: strictly in forests; mainly in forest habitats; also in forests but mostly living in special habitats like swamps or warm slopes; eurytopic in open land habitats. 76% of the species and 94% of the individuals belong to the first two groups, i.e. the spiders show a high affiliation to forest habitats.

Central European beech forests are inhabited by a much larger number of species than previously estimated. The seven investigated animal groups comprise 1480±170 species, representing 25% of all animal species which occur. Extrapolation yields a total of 5800 species for a beech forest with a size of about 70 ha (reserve & reference area). This is 3-4 times more than the 1500-2000 species hitherto assumed to occur in such an area.

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