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Distribution, habitat requirements and selected parameters of the Aesculapian snake *Zamenis longissimus* population in the Bieszczady Mountains (southeastern Poland)

Even though many endangered populations have been investigated in detail in the last 40 or 50 years, the mechanisms governing the spatial range and presence of populations remain an open question. Important factors in this respect, besides the disappearance of habitats, include the minimal expansivity of populations and the animals' behaviour regarding choice of habitat.

This PhD thesis is based on a set of four publications describing research that I carried out in 2009-2014 on the seriously endangered population of the Aesculapian snake *Zamenis longissimus* in the western Bieszczady Mountains (SE Poland), where this species occurs at the northernmost edge of its contiguous range. My studies focused on fundamental ecological aspects, such as the magnitude of the living space and how it comes to be occupied (I), the species' distribution (II), habitat requirements (III) and selected population parameters (IV).

I used results of telemetry studies from Poland and other European countries (I) to perform spatial analyses of the species' habitat requirements (III) and to discuss its dispersal capabilities and the isolation of its populations (II, III). In the second paper (II), I presented my research on the current distribution of the species in the Bieszczady and the Sanok-Turczan Mountains compared with its historical distribution known from literature. In the third paper (III), I analysed factors governing the occurrence of the Aesculapian snake at three spatial scales. In the last paper (IV) I focused on the spatial and temporal patterns of sex ratio in adult individuals.

To conclude, the results of this research indicate that the species has a settled lifestyle, low numbers and low effective population size, which result in escalating isolation of localities and shrinking area of occurrence. Disproportion between the sexes in adults (4:1 in favour of males) may be interpreted as an early stage of the population extinction process at the edge of the species' distribution range. This process is probably related to the limited availability of egg-laying sites, which compels females to undertake farther movements and thus may increase the mortality risk. Active conservation measures should involve creating artificial reproduction sites and permanent rocky shelters to facilitate dispersal and connectivity among subpopulations.