

Habitat requirements of the pulmonate land snails *Trochulus oreinos oreinos* and *Cylindrus obtusus* endemic to the Northern Calcareous Alps, Austria

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The Austrian endemic land snails *Trochulus oreinos oreinos* (Wagner 1915) and *Cylindrus obtusus* (Draparnaud 1805) have been in the focus of phylogenetic research in the course of our project about Austrian land snails. For *T. oreinos*, which was formerly regarded as a local subspecies of the wide-spread *T. hispidus*, a first phylogenetic analysis combined with more detailed morphological investigations was performed recently indicating that *T. oreinos* is an old phylogenetic lineage and presumably has a long independent history in the North-Eastern Calcareous Alps. *Cylindrus obtusus*, which is an old distinct lineage within the Helicidae, is – like *T. oreinos* - restricted to high elevations of the Eastern Alps. In its easternmost populations it shows some specific morphological traits, as a somewhat smaller size and irregular building of mucus glands.

In this study we wanted to know, if these findings are also reflected in the habitat preferences of these species. Four sites, which mark the easternmost distribution border of both species, were selected for further investigation: the mountains Hochschwab, Schneealpe, Rax and Schneeberg. From these areas we had an adequate sample and exact vegetation maps were available.

In *C. obtusus*, the morphological specialties of the easternmost populations are perhaps a result of the suboptimal climatic conditions on Rax and Schneeberg Mountain. Both massifs are under strong influence of the warm pannonic climate, which might afflict this cryophilic species. *C. obtusus* and *T. oreinos* prefer rocky habitats from the subalpine ecotone upwards. While *T. oreinos* is restricted to loose *Caricetum firmae* meadow and alpine boulder and scree societies, *C. obtusus* can inhabit several plant communities. Both species are restricted to primarily forest free sites on rocky ground or thin layer of rentsina soil. Therefore they are not afflicted by abandoning of man-made meadows, the most important recent change of alpine agriculture. As both taxa are restricted to the subalpine and alpine ecotone, at least populations at the lower altitudinal distribution are potentially afflicted by climatic changes

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