

Testing gene flow between the subspecies of *Trochulus oreinos* in their supposed contact zone.

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Trochulus oreinos is an endemic land snail species occurring in the Northeastern Austrian Alps at elevations above tree line. Two morphological highly similar subspecies (*T. o. scheerpeltzi*, *T. o. oreinos*) have been distinguished. Genetic analyses of the nuclear marker sequence *ITS2* (*internal transcribed spacer 2*) as well as mitochondrial marker sequences (*cytochrome c oxidase subunit 1 (CO)*, *16S rRNA gene*, *12S rRNA gene*) indicated a high genetic divergence between the two taxa. Analysing a large sample in the potential contact zone at Haller Mauern, a clear phylogeographic break was found: All western samples were part of the clade representing *T. o. scheerpeltzi*, while all eastern samples clustered with *T. o. oreinos*. However, within the sampling sites of the eastern Haller Mauern, a few individuals possessed a *COI* sequence matching the *T. o. oreinos* clade, while at the *ITS2* locus they were heterozygous possessing the alleles of both taxa. Based on these results that suggest historical and/or ongoing hybridization, no decision could be made on whether to consider the two taxa as separate species. Therefore, in a next step, the amount of gene flow between the two subspecies of *T. oreinos* within the Haller Mauern contact zone was investigated using Amplified Fragment Length Polymorphisms (AFLPs), a DNA fingerprinting technique. 200 individuals including samples from the whole distribution range were investigated. The AFLP results verified a clear geographical separation of the two taxa, congruent with the mitochondrial data. Although they occur on the same mountain range without a physical barrier and only about 7.000m apart from each other no indication of ongoing gene flow between the two taxa was found. The results of the AFLP analysis will also bring further insights into the glacial refugia of the two subspecies.