

Rodent communities and parasites in a changing environment of forests in the Italian Dolomites

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Complex human-related environmental changes at the global level are of a particularly high priority in ecological research. Global climate and land-use changes may alter the richness of biodiversity and related changes in distribution of parasites and pathogens may also result in the (re)emergence and spread of zoonoses in humans. As rodents are reservoirs and vectors of several important diseases in Europe and are sensitive to environmental change, the presented project “Rodent communities in a changing environment: implications for human health in the Alps” (ROCOALPS) aims to help our understanding of parasite/pathogen dynamics in complex relations with host communities and environment by using this particular model system: rodents - ectoparasites - helminths - a virus transmissible to humans.

In this contribution we provide an introduction to this ongoing project. We show differences in rodent (host) dynamics at different altitude and disturbance levels. Similarly, important differences were found in different parasite (intestinal helminths, ticks, coccidia) and pathogen (LCMV) distribution and dynamics according to the altitude and host species. A more specific model is presented of factors influencing LCMV prevalence. Female *Apodemus flavicollis* had higher chance to be infected in low and less in high-altitude forest, and heavier mice had higher chance to be infected in disturbed and not in undisturbed forests. These results are discussed in context of potential heterogeneity in social/transmission contacts between the sexes and important implications for human health are mentioned.