Harvestmen communities of three vegetation stages in a revitalised pre-alpine riparian forest (Arachnida, Opiliones)

Bachelor thesis Faculty of Science, University of Bern handed in by Malin Röllin

Supervisor Prof. Dr. C. Kropf

Influenced by fluvial dynamics, the riparian forest is one of the most biodiverse ecosystems in the norther hemisphere. These forests provide important ecosystem services. Human activities have mostly destroyed this environment over the last 200 years. Almost all the remaining forests at lower altitudes have lost their characteristic habitat and vegetation heterogeneity. During the current biodiversity crisis, efforts are made to revitalize the remaining areas. However, the effects of such processes on species communities are widely unknown. In this study we looked for differences in harvestmen (Opiliones) species richness, activity density and species composition across three vegetation stages in a newly restored (2014 – 2016) pre-alpine riparian forest near Bern, Switzerland. All harvestmen were captured by using pitfall traps. We also used a plant community-based indicator value system to look for correlations between species composition and environmental parameters. We found significant differences in species richness between the vegetation stages, and the highest abundance in the oldest vegetation stage. No differences were found in activity density and species composition. Furthermore, the importance of microclimatic conditions for harvestmen is demonstrated: Each species showed at least two distinct (i.e. only slightly varying) indicator values. We conclude that harvestmen are good ecological indicator species, and that all the found harvestmen species were most likely present already prior to the revitalisation process.

Key words: Arthropods, fluvial dynamics, harvestmen, moisture, pitfall traps, plant species indicator values, restoration, Switzerland, riparian forest