

Ecological importance of red wood ants nests in the Swiss Prealps

Nicole Danjou

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It is well known that red wood ants play an important role in the forest ecosystem. The IUCN lists several of them as near threatened. However, the knowledge about their distribution in Switzerland, especially in the canton of Fribourg, is often incomplete or no longer up to date. In addition, the habitat requirements have not yet been fully clarified and little is known about nest site choice and microhabitat requirements. Availability of food becomes a critical factor during the winter season for animal species and ants are food resources used by many species of birds and mammals.

The aim of this study is to carry out a systematic inventory of wood ant nests in three zones of the Western Prealps of the Canton of Fribourg, determine the species present, assess whether species and nest characteristics differ between different sites and analyze the vegetation in the vicinity of nests. We also aimed to describe animal communities observed in and around nest during winter and to investigate whether ants could be food source for adult grouses by collecting weekly droppings on nests and analyze their content in ant fragments.

We found that there is an influence of the light conditions on the nest size. the presence of trees that may host aphides seem also to be involved in the localisation and densities of nests. Finally, the ants influence the vegetation around their nests with their activity. Nests visits by animal species were observed throughout the winter and spring season with a significant reduction during summer and indicates that nests play a role as alternative food supply. Additionally, our results on the grouse droppings suggest that the nests are exploited as food complement also by adults and during an extended period until summertime.

This knowledge can contribute to increase colonization chances for the wood ants by keeping forest with enough older trees and to manage the access to light by, for example, maintaining some small open area in managed forests. Protecting ants and increasing the nest densities would benefit to many other forest dwelling species.

Superviseur : Gwenaël Jacob