

**RED WOOD ANT SETTLEMENTS AS OUTSIDE STUDY OBJECTS AND THE MANAGEMENT OF ANT-FRIENDLY TOURISM**

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Ecotourism and outside study in nature are essential to educate schoolchildren and students, offering recreation possibilities for adults. Red wood ants (*Formica* s. str.) are the key species in boreal forest communities. Their importance in forest ecosystems, interaction between birds, mammals and other insects has a significant role in the functioning of a forest community. The largest red wood ant settlements have become one of the most popular tourist and outside study objects in Estonia. Unfortunately, the unmanageable tourism and trampling by tourists has become a serious problem in nature reserves in Estonia.

The impact of human trampling load on the red wood ant settlements was observed through the traffic intensity of foragers on ant paths, number of ant paths and vitality of the nest. Trampling load was estimated by the degradation of the herbaceous plant cover. Intensive trampling causes a decrease in the colonies' activity and an increase in the nest damages. A comparison of different trampling load rates showed that the more intensive trampling is, the bigger the damages are, and the best way for ants would be the absence of trampling load. The disturbed ant colonies and supercolonies are more vulnerable to such enemies of red wood ants as birds, mammals and nest parasites.

Future ant tourism should be more dispersed between different red wood ant settlements, and professional guides are needed. The main precondition and the best way to protect ants from trampling load is the existence of natural barriers like ditches between hiking trails and nests, which would prevent people from stepping on ant paths. Although nature tourism is essential to educate people, the settlements of ants should be well exposed and their visiting managed reasonably, if we want to preserve the beauty of intact nature and the phenomenon of the social life for the future generations and save threatened species. The aim of our presentation is to explain the impact of trampling load on red wood ant settlements and how to manage ant-friendly tourism.

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