

# How does debarking of bark-beetle-colonised spruces affect the saproxylic beetle species richness and composition?

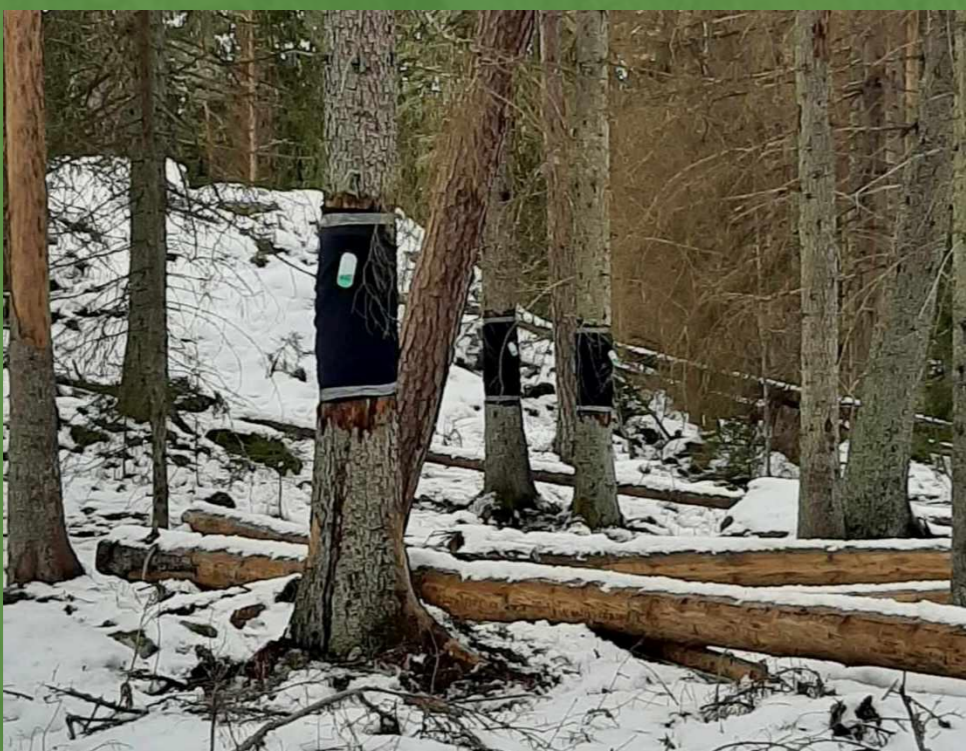
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## Background

Spruces (*Picea abies*) stressed by the drought became vulnerable to insect attacks, which resulted in large-scale attacks of the European spruce bark beetle (*Ips typographus*). One of the common methods of fighting spruce bark beetle outbreaks is debarking of newly colonised spruces. The aim of this study was to investigate how this method affects biodiversity of other saproxylic beetles.

## Methods

In four nature reserves, eclector traps were installed on three types of dead spruce wood: debarked logs, standing wood with bark, and logs with bark. The wood was of four different ages (managed in 2019, 2020, 2021 and 2022). All beetles caught in the traps were identified and analysed to test the effect of the management method and age on the number of individuals and species of saproxylic beetles, as well as species composition.

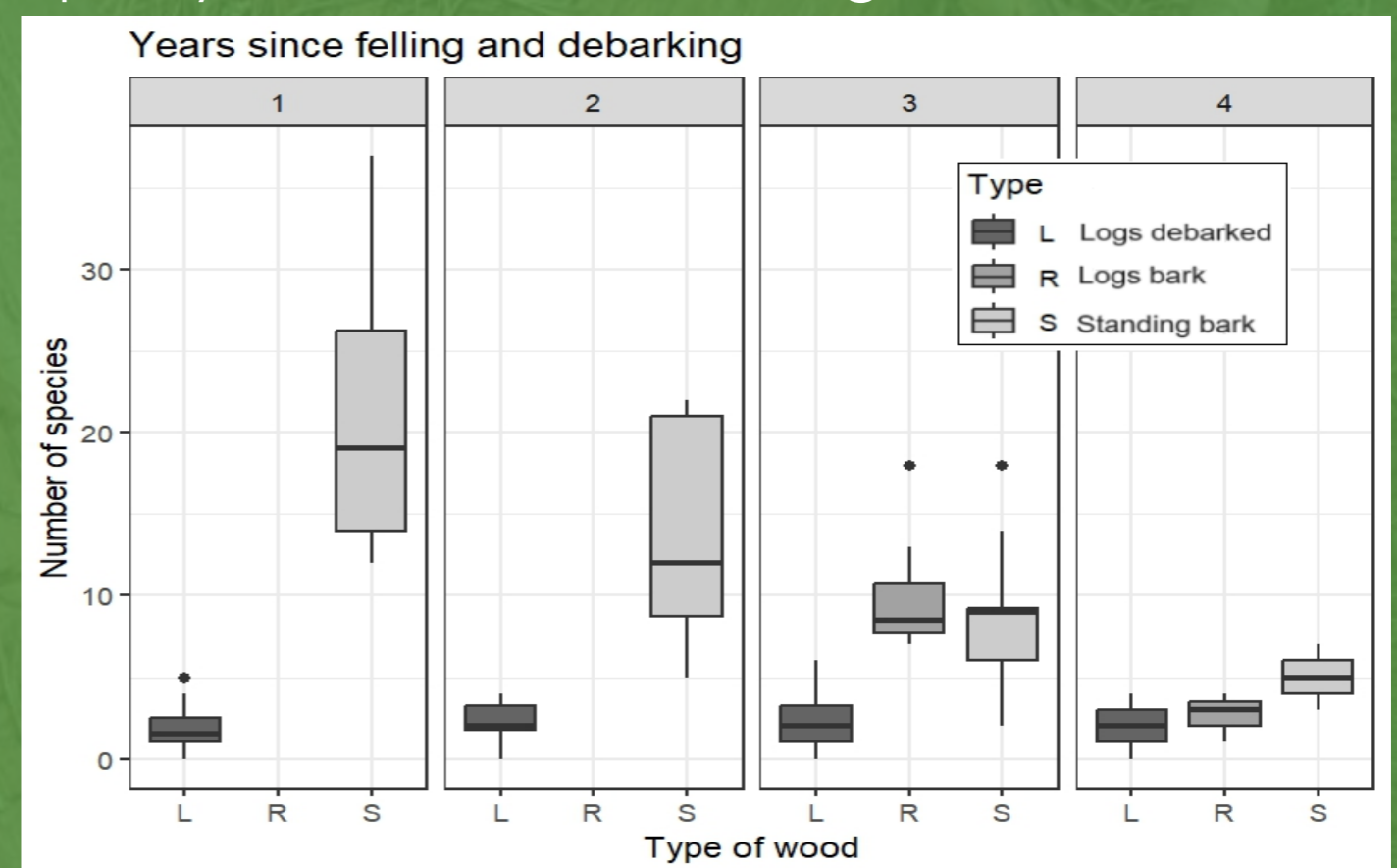


## Conclusion

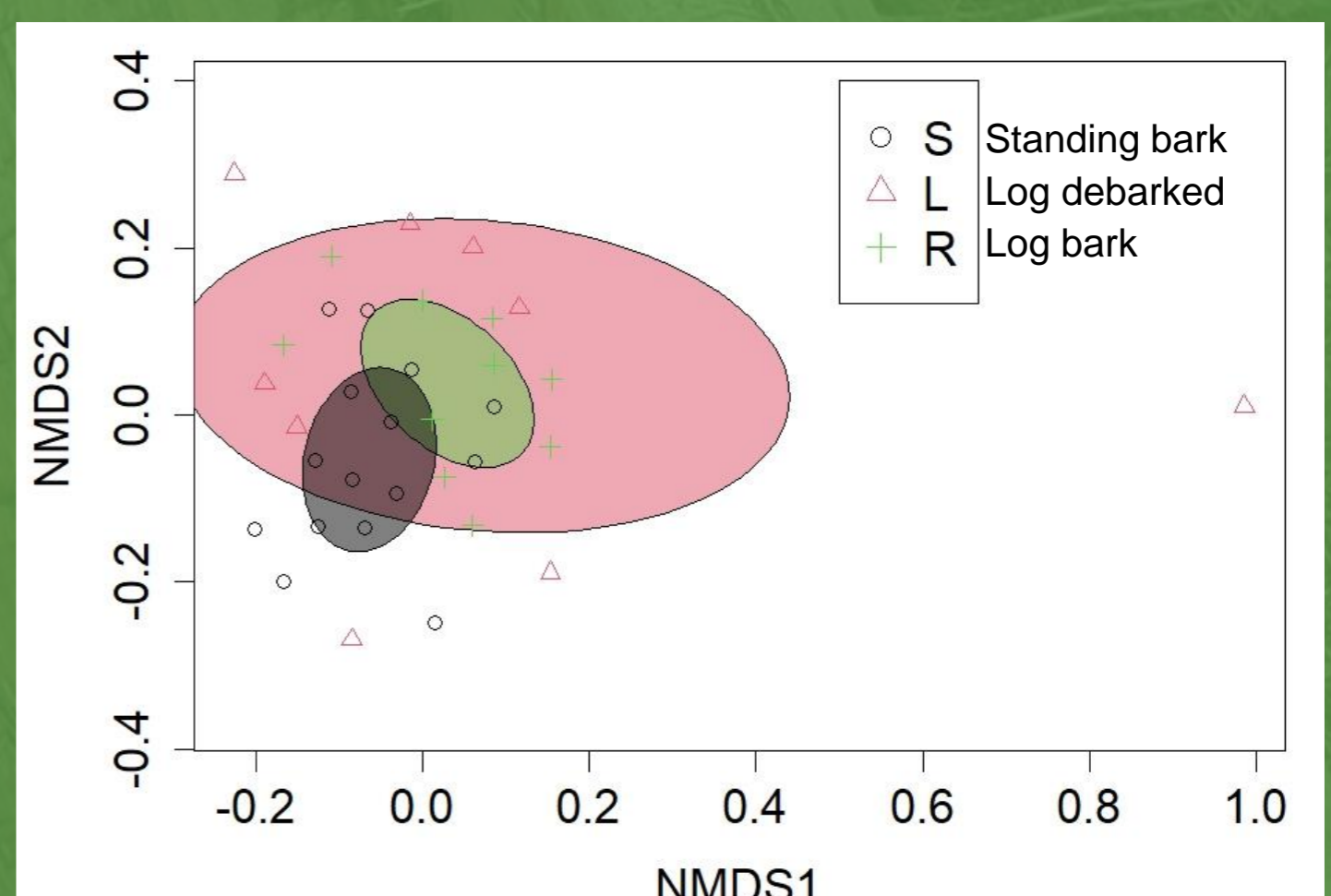
Debarking of European spruce bark beetle colonised spruces affect other saproxylic beetle species richness and composition in a negative way. Early stages of standing dead wood with bark contain the largest numbers of species and individuals. The results may suggest that other management methods should be considered to conserve biodiversity of the insects.

## Results

In total, 47 818 individuals of 124 species of saproxylic beetles were caught.



There was a significant interaction between type and age of wood suggesting that the number of species in standing trees with bark decreased with age, while debarked logs remained constantly low over time. The same trend was noted for the number of individuals.



There were differences in species composition between the dead wood types. Logs (debarked and with bark) were not significantly different from each other, while standing trees with bark were significantly different from logs.