

Comparing the composition of saproxylic beetle fauna on old hollow oaks between two time periods.



Background & Aim

BACKGROUND

The present study compared results from a study conducted in 1994 investigating the occurrence of **saproxylic beetles**, with present species communities.

AIM

- To compare the composition of saproxylic beetle fauna on old hollow oaks between 1994 and 2018.

Methods

A total of 51 oak trees were revisited and saproxylic beetles were captured using window traps. Conditions within & around the host tree such as **canopy cover**, **forest regrowth** & **trunk circumference** were assessed in relation to influencing species composition.

Captured species were sorted according to ecological groups based on feeding habits & into families to observe differences in composition between the two years. Odds ratio analysis was conducted to investigate the likelihood of capturing the same species in 2018 as in 1994.

Results

More species were recorded in each guild for 2018 than in 1994 (**Fig. 1**) and the result analysis further revealed a difference in species composition between 1994 and 2018 (**Fig.2**). In addition,

- There was high chance of finding the same species as in 1994 (**Fig. 3**).
- Canopy cover & trunk circum. (*P*-value 0.001, 0.014 respectively) significantly influenced species composition in 2018.

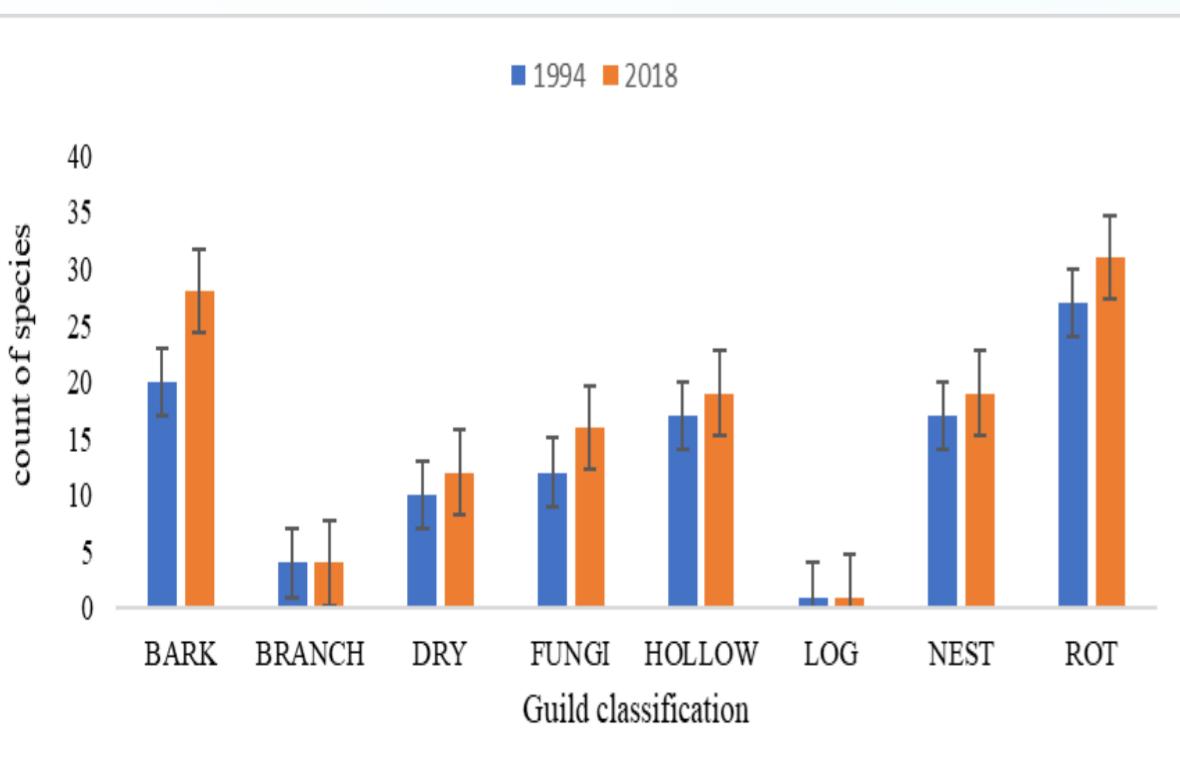


Fig. 1: Species comparison according to feeding preferences (i.e. in guilds)

Results cont'd

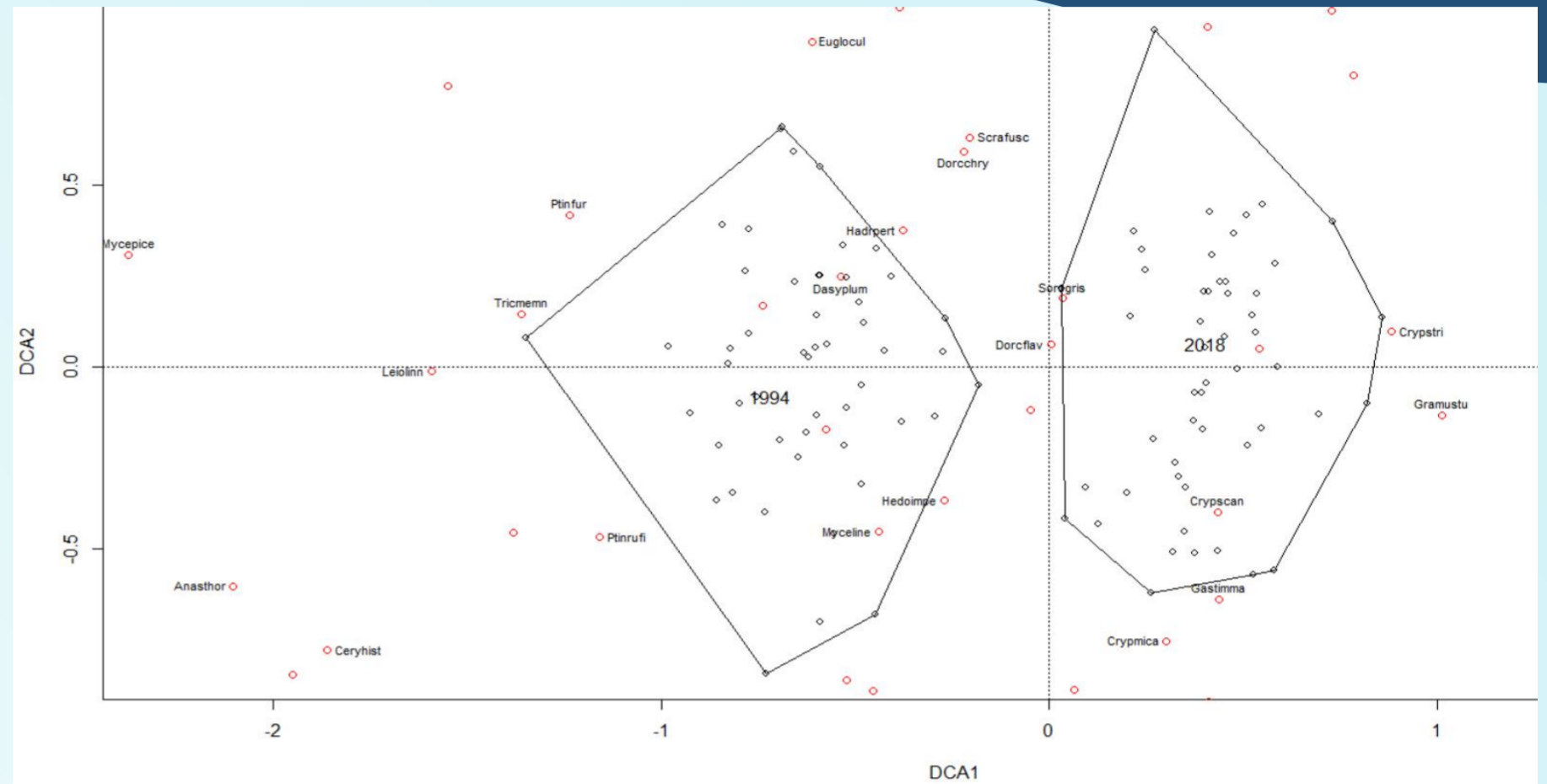


Fig. 2: Detrended Correspondence Analysis. Trees appearing in the same boundary (i.e. clustered together) have the similar species composition.

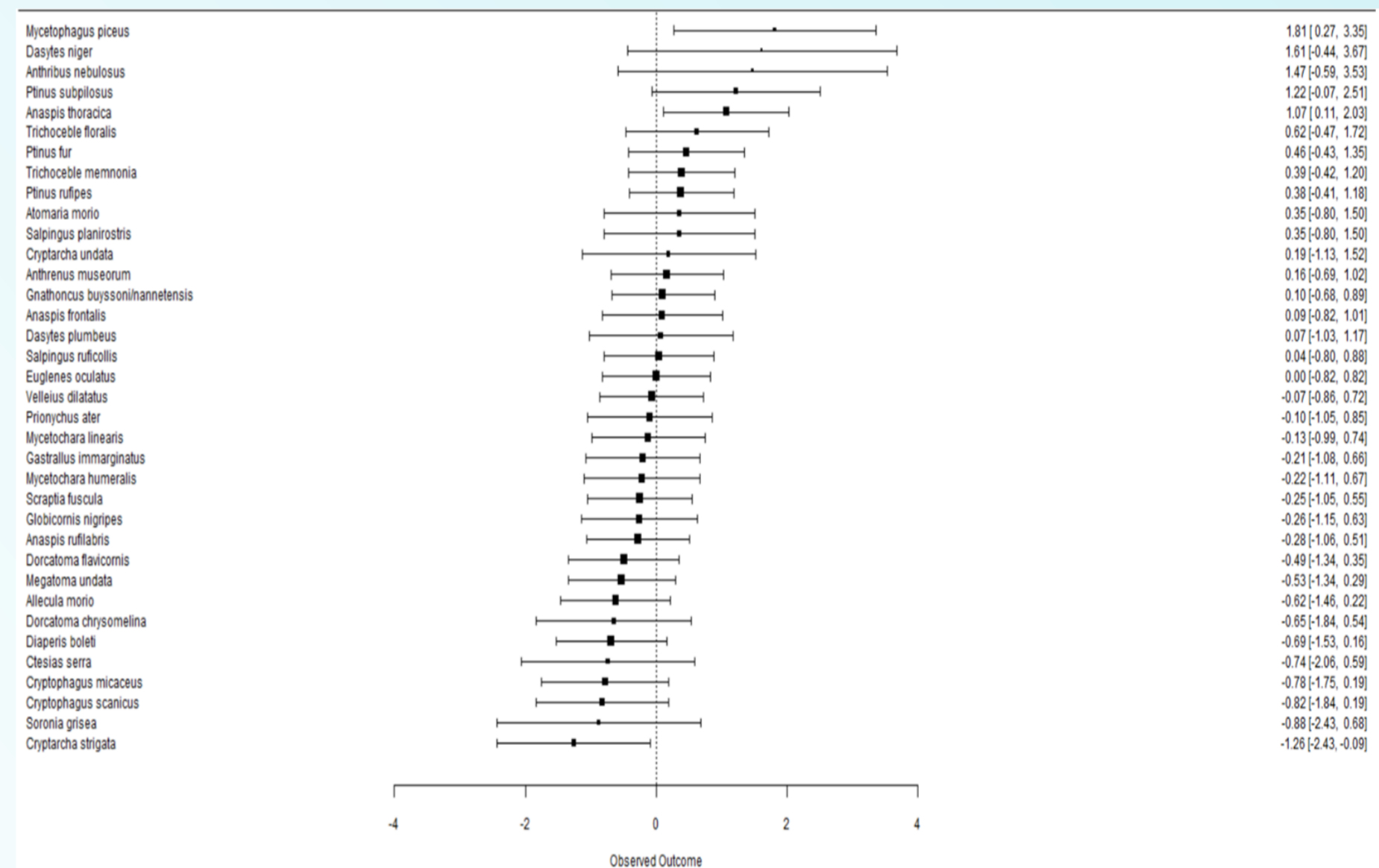


Fig. 3: Odds ratio for capturing species that occurred in more than 10 host trees. The left side of the zero line indicates low odds, while species on the right side indicate high odds.

IMPORTANT NOTE: The Results based on **Figs. 1 & 2** may have been sensitive to temperature differences & possibly could have blurred/biased the species composition analysis, because warmer conditions led to increased flight activity and not necessary change in species composition.

Discussion & Conclusion

After a period of 24 years, no drastic changes in species composition is seen. Perhaps this could also be attributed to existing management interventions & also climatic conditions that may be supporting a stable saproxylic beetle fauna assemblage.