



# Mistletoe distributions and abundance in the forest canopy are vulnerable to climate change

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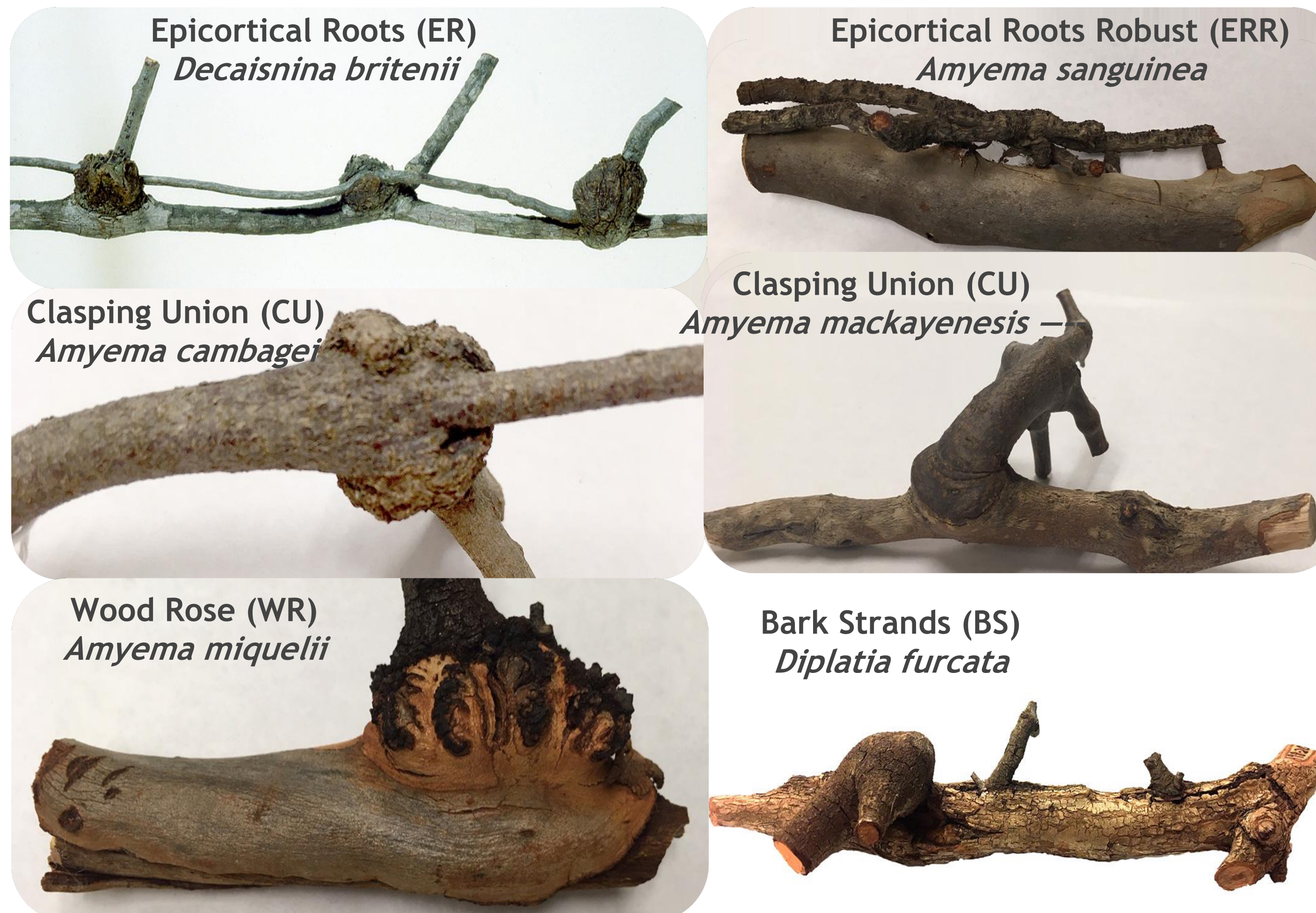
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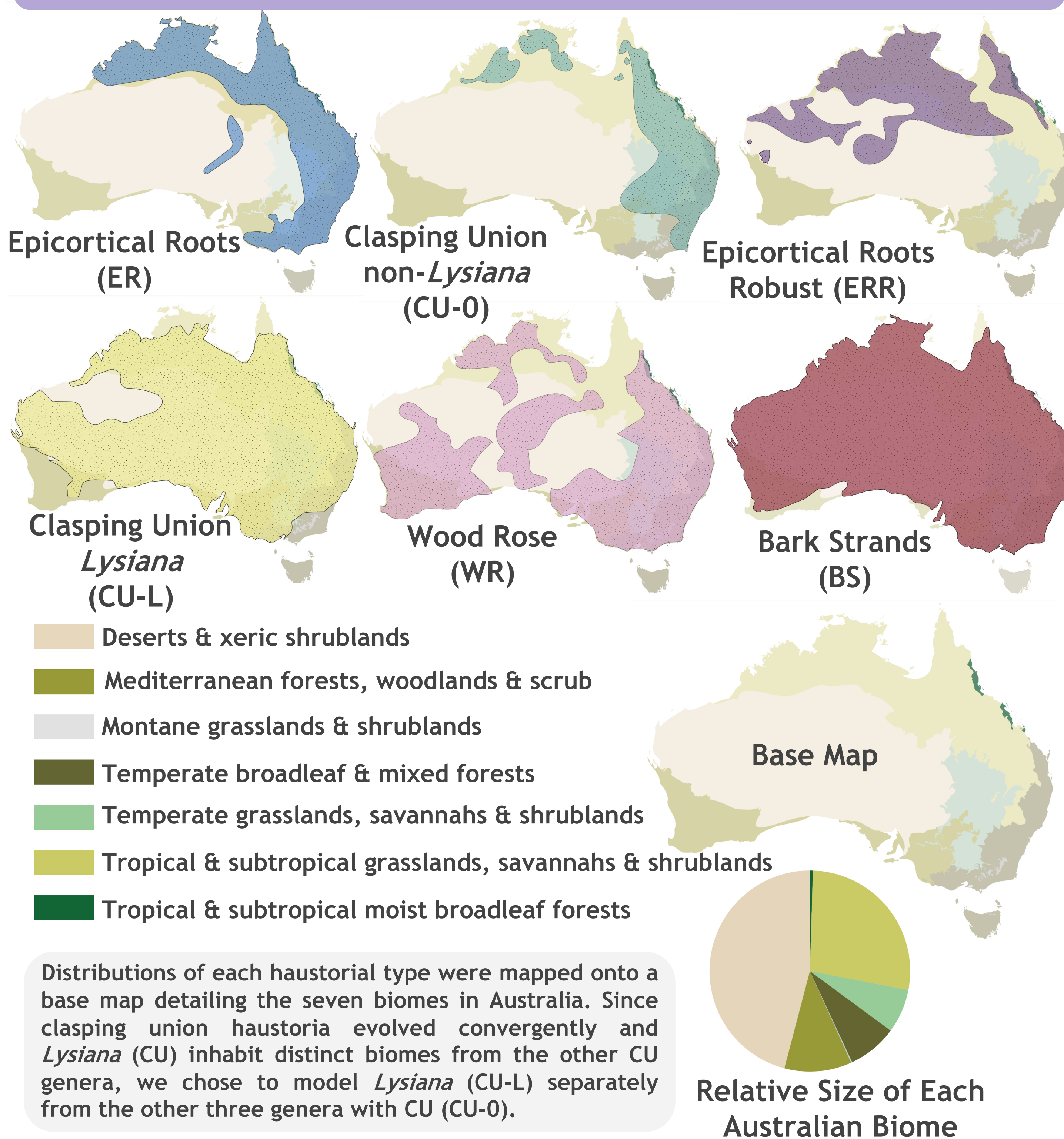
## Introduction

Currently, mistletoe occurrence is largely attributed to host preference and availability, even though most mistletoes are generalists with smaller distributions than their host. Here, we investigate the effect of climate on mistletoe distribution in the context of their haustoria and construct models to predict future distributions in Australia.

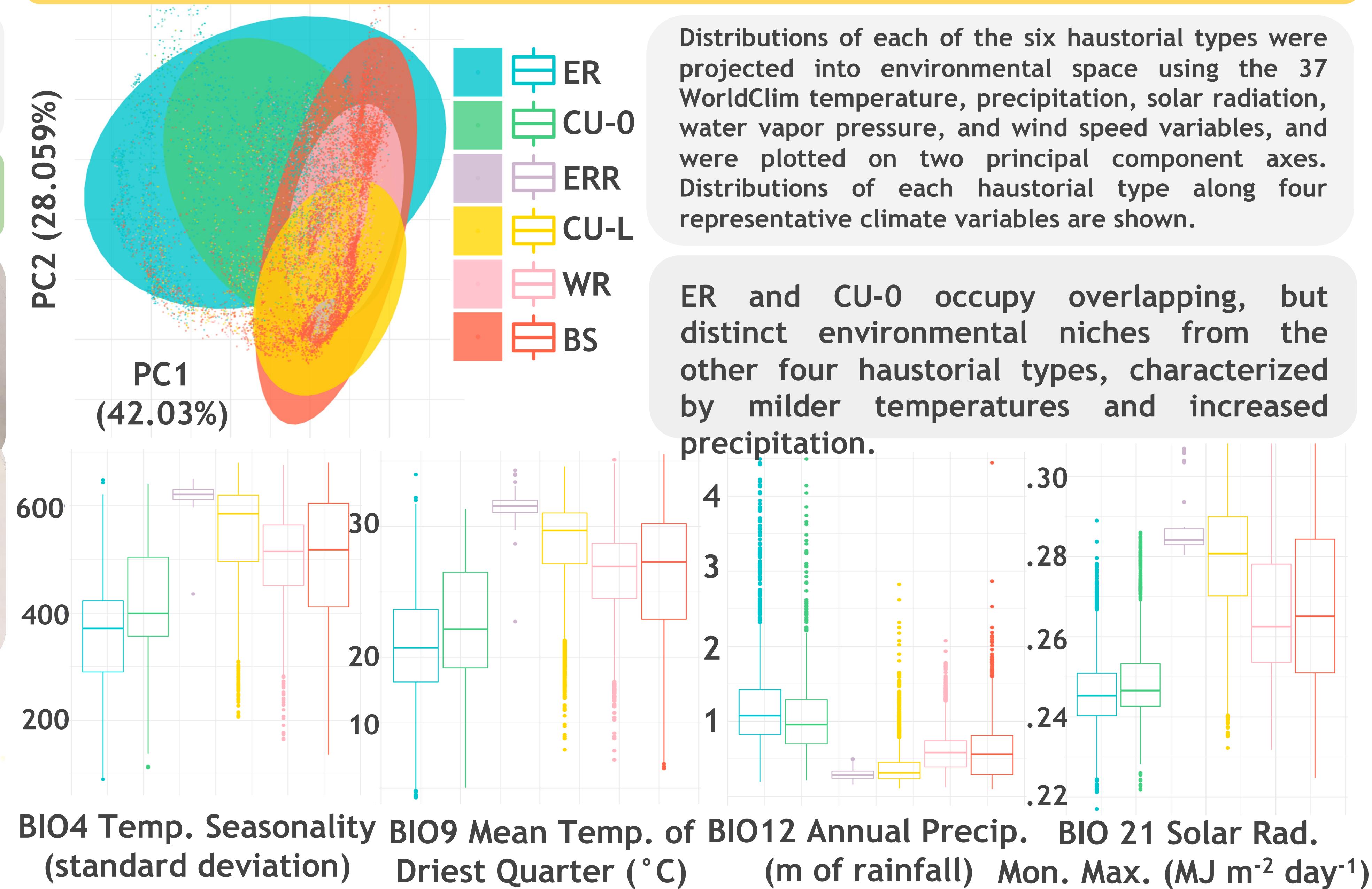
## Mistletoe feature diverse haustorial attachments



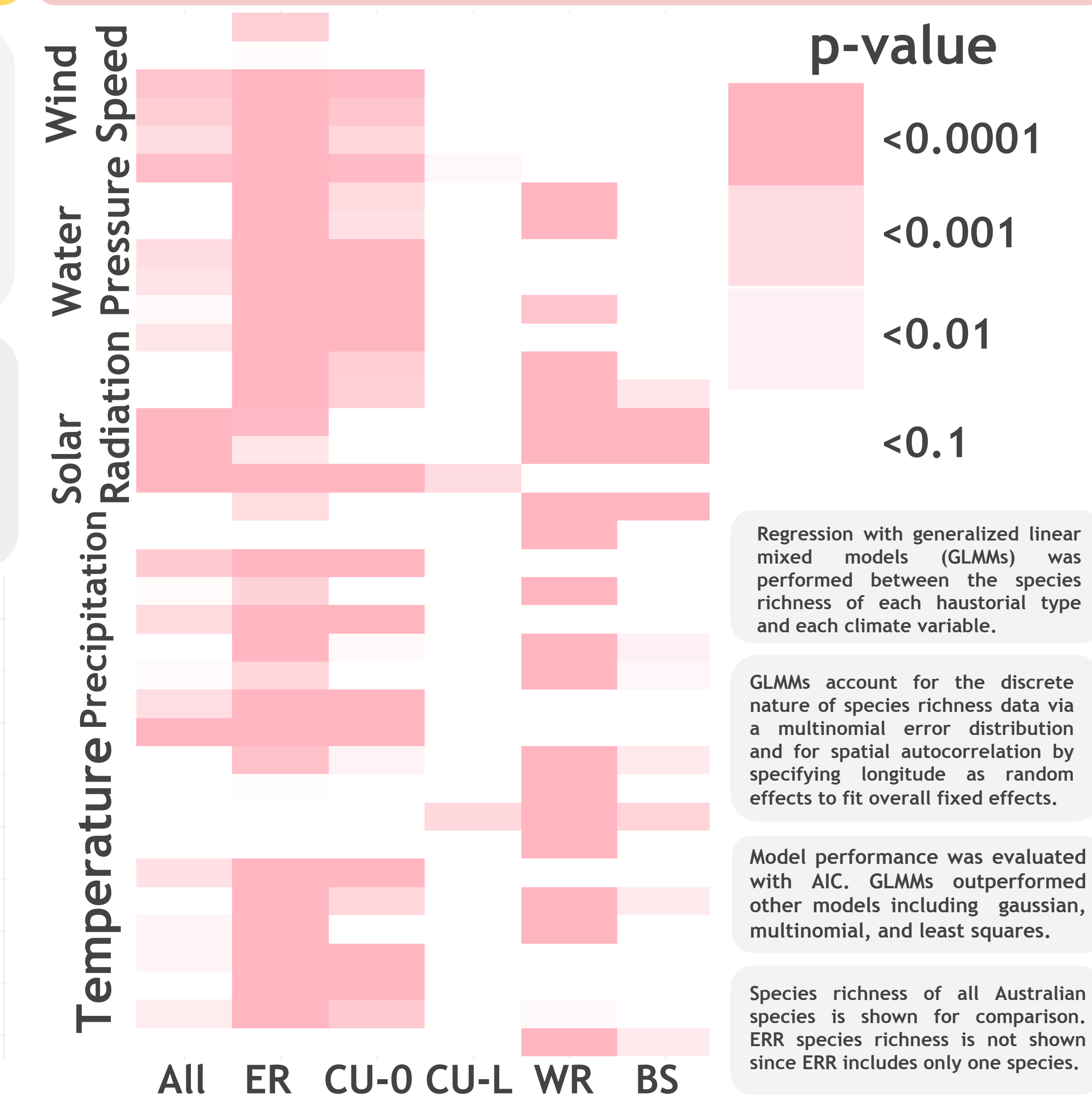
## Haustrorial types have distinct distributions



## Haustrorial types occupy two distinct climate niches

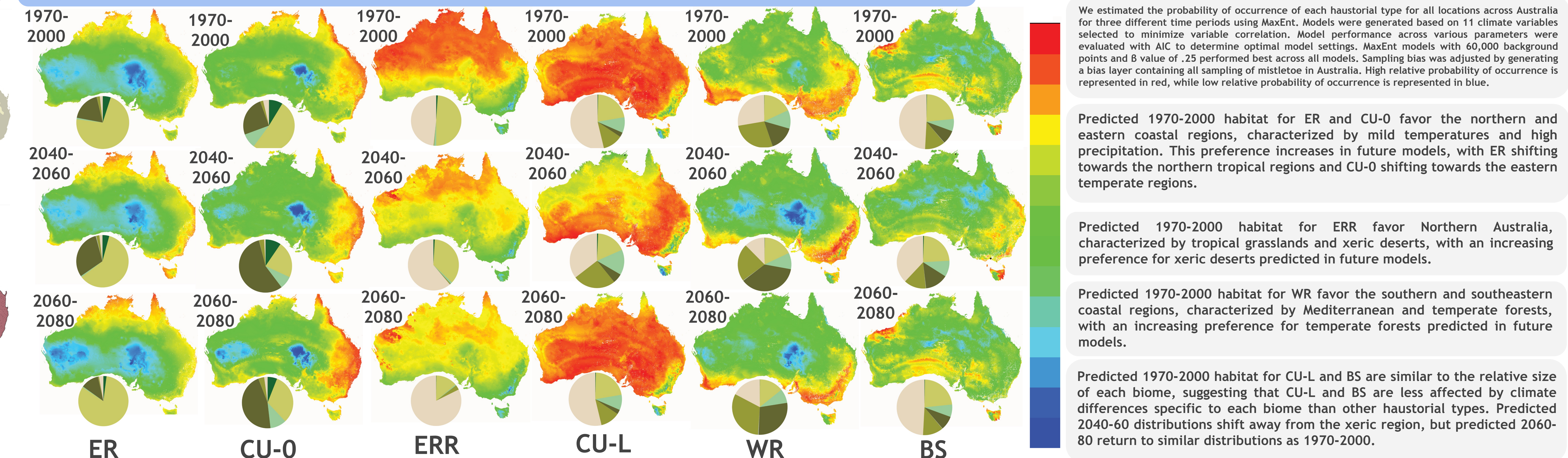


## Species Richness & Climate



ER richness is strongly correlated with most variables, while CU-L and BS richness are not correlated or only weakly correlated with most variables.

## Distributions are predicted to shift with their preferred biome



## Conclusions

Each haustorial type features a distinct distribution, with ER, CU-0, ERR, and WR localized to particular regions, while CU-L and BS were found in most of Australia. Climate modeling suggest ER and CU-0 occupy a distinct climate niche from other haustorial types, characterized by more mild temperatures and higher precipitation. Regression between species richness and climate variables suggest that climate is important for ER, CU-0, and WR richness, but less so for CU-L and BS. Lastly, climate change models suggest ER, CU-0, ERR, and WR will shift with preferred biomes, while CU-L and BS will remain largely unaffected.

## Acknowledgements

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