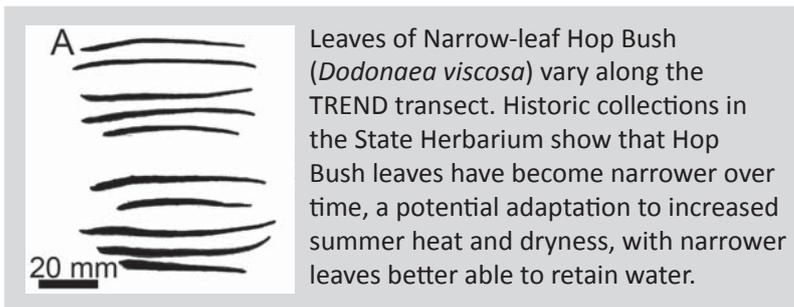


terrestrial ecosystems



TREND research is showing that we can observe the effects that a changing climate is already having on our native ecosystems. Some species may be vulnerable to temperature change due to low genetic diversity and little potential to adapt or migrate. Other species (including weeds) may be able to move to previously inhospitable regions.

Monitoring sites between the Fleurieu Peninsula and northern Flinders Ranges allow us to detect ecosystem changes. By sampling along a gradient, the ecological impact of current climate differences between sites can be analysed and used to make predictions of future change.



Through better understanding of likely future ecosystem changes, we can prioritise conservation investment to focus on vulnerable species, refugia and biodiversity corridors to help species adapt.



Herbarium records show that some orchids are flowering approximately 20 days earlier than they were 20 years ago. This type of change can disrupt the relationship between plants and pollinators, and cause local extinction. This demonstrates the sensitivity of our native vegetation to climate variability.

The environment changes markedly along the TREND transect, ranging from dry mallee in the northern Flinders Ranges to moist forests in the Adelaide Hills.

The area in grey shows regions that are predicted to be most sensitive to current and future climate change. We expect changes in flora and fauna in these regions, as well as an increased threat from invasive species.



Flinders Ranges Bottlebrush (*Callistemon teretifolius*) is mostly restricted to ridges between the Barossa Valley and Flinders Ranges. It appears to be highly vulnerable to climate change but our genetic data suggests it may have a safe haven in the southern Flinders Ranges, where genetic diversity is higher and suitable habitat is likely to remain.