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USING NECTAR LANDSCAPES TO ASSESS COMPETITION BETWEEN DOMESTICATED HONEYBEES AND WILD INSECTS IN SOUTH AFRICA AND SCOTLAND

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ABSTRACT

Domesticated honeybees can compete with wild insect populations for resources such as nectar and pollen. Within the Fynbos biome and in Scottish heathlands, beekeepers are often prevented from placing hives within National Parks due to concern over such competition. Comprehensive research on whether honeybee-insect competition occurs in both contexts remains lacking however. In 2016, a landmark paper by Baude *et al.* 2016 quantified landscape nectar sugar production for the UK from the 1940s-2000s. By quantifying nectar sugar production through time at the landscape level in this way, it is possible to determine the carrying capacity of a habitat for groups of nectar-feeding insects, as well as periods which present potential 'hunger-gaps', and which plant taxa are most important to different insects groups through time.

Using a similar community-wide approach, we quantified the landscape nectar sugar production in Scottish Heathlands and three South African Fynbos types across the flowering season. Plant-pollinator network analysis and a predictive modelling approach will be used to describe the insect nectar sugar demands through time, to determine what stocking density of honeybee hives is required to avoid competition with wild pollinators in these habitats. Given the economic and ecological value of both managed honeybees and wild pollinators, it is important to determine the carrying capacity for nectar-feeding insects to ensure that these habitats are not over-stocked.