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The causes and consequences of a colonising pollinator

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Climate change has caused dramatic shifts in species' distributions; many species are expanding in their range while others are becoming more restricted. With species range expansions there is also an increase in the number of colonisation events. Insects are particularly good colonisers as they have high dispersal capabilities and high reproductive rates. Bumblebees are a valuable group of pollinating insects and are the primary pollinators of several agricultural crops. There is evidence for severe declines of many bumblebee species globally. In contrast, *Bombus hypnorum* was first recorded in the UK in 2001 in Wiltshire, South West England. The species has expanded its range and is now well established across much of the UK. The origin, colonisation route and drivers behind its rapid expansion are largely unknown. Using whole genome scans this study aims to investigate the genetic signatures of *B. hypnorum*'s colonization, specifically looking for; indicators of a genetic bottleneck, inbreeding, single or multiple founding events, and whether populations at the periphery of the expansion have experienced extreme selective pressures. We are also considering the possibility that parasitic release may have been a contributing factor via molecular screening and investigating the potential for foraging competition with native species. The results will highlight the qualities that have contributed to *B. hypnorum*'s success as a coloniser and may indicate whether it has the potential to negatively impact native species or if it will simply fit into an empty niche and have negligible impacts on our current native fauna. In addition, this study will contribute to the current understanding of the ecological and evolutionary factors underpinning changes in distribution and abundance of an important group of pollinators.