Social bees in New Zealand: foraging interactions and implications for communities

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Eligible for student prize

Worldwide, honey bees (*Apis mellifera*) are extensively utilised for their pollination services. Since the 1950s, the mite *Varroa destructor* has caused widespread losses of managed and feral honeybee populations around the world. Until 2000, New Zealand and Australia were the last major beekeeping countries free of *Varroa*, when mites were found near Auckland. The spread throughout New Zealand is on-going while so far Australia remains *Varroa*-free. The effects of *Varroa* on pollinator communities in New Zealand have not been extensively studied. In particular, feral honey bee populations have likely exhibited dramatic losses, and the subsequent community level effects are unknown. If bumblebees (*Bombus* sp.) compete with honey bees, a *Varroa*-induced decline in the number of feral honey bees could potentially enhance the availability of resources for bumble bees resulting in pronounced ecological release. Using a glasshouse at AgResearch Invermay as a flight room, we are examining the effects of competition for resources between honey bees and bumblebees. Preliminary results suggest that conspecifics prefer to forage together on an artificial flower than mixed species. Our autumn experiments will further examine interactions under conditions of varying resource quantities. Future field research will examine the implications of changes in pollinator communities within New Zealand.