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THE BUZZ ABOUT TOWN: THE EFFECTS OF URBANISATION ON BEE AND WASP COMMUNITIES IN CAPE TOWN, SOUTH AFRICA

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ABSTRACT

Bees and wasps provide essential ecosystem services by pollinating urban plants and foods. However, there are massive global declines in many insect groups, and little is known about the impacts of urbanisation on pollinators in rapidly urbanising areas of Africa. Within the Durbanville area of Cape Town, we investigated the effects of urbanisation and availability of floral resources on bee and wasp (pollinator) diversity, community composition, and nesting guild distribution across an urban-rural/natural gradient. Using pan traps, specimens were collected from 18 sites in austral spring 2019 and 2020. A total of 433 bee and 45 wasp specimens, comprising of 45 bee and 27 wasp morphospecies respectively were collected. Bees from the family Halictidae (particularly *Seladonia* and *Patellapis* species) were the most abundant. Except for *Apis mellifera*, all other bee species were solitary, and most (86.7%) collect pollen from flowers. Four different nesting guilds were identified, with the most common being ground-nesters (68.9%). Floral resources, rather than the degree of urbanisation, had a strong effect on pollinator diversity and community composition. This study supports the development of several cost-effective and achievable conservation initiatives, such as adopting no-mow periods during austral spring and developing small-scale bee-friendly floral-rich patches, which can be undertaken by existing municipal structures and private landowners alike. Suggested future studies include investigating the ways pollinator diversity and community composition is influenced by 1) individual floral species and characteristics, 2) the size, shape, and location of habitat/floral patches, and 3) the effects of urban warming.