

Understanding Foraging and Nesting Behaviour of Ground Nesting Bees in Dunedin, New Zealand

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Electronic Supplementary Materials

Appendix S1. Supplementary Figures

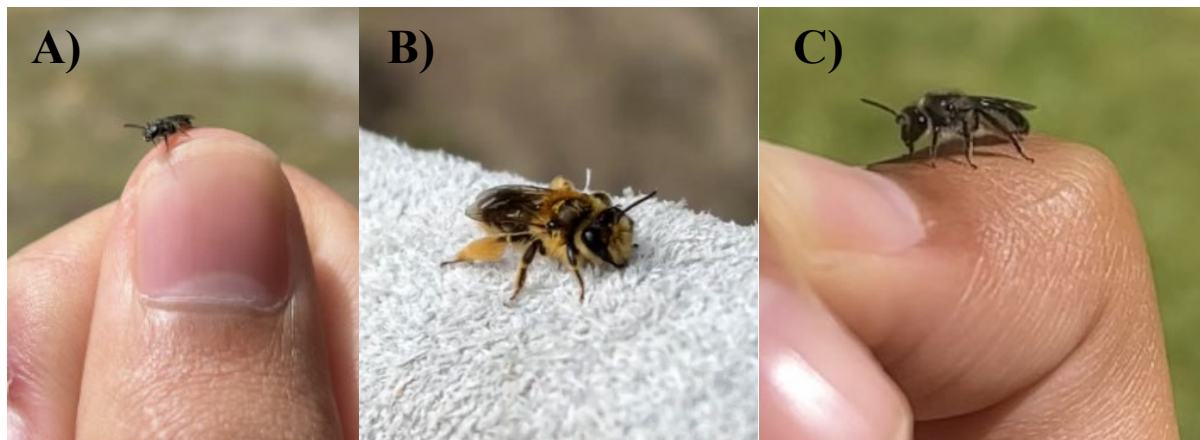


Figure 1. Three native solitary bees found in Dunedin during study: (a) *Lasioglossum sordidum*; (b) *Nesocolletes fulvescens*; (c) *Nesocolletes pekanui*. Photo credits: Zhuali Lim.

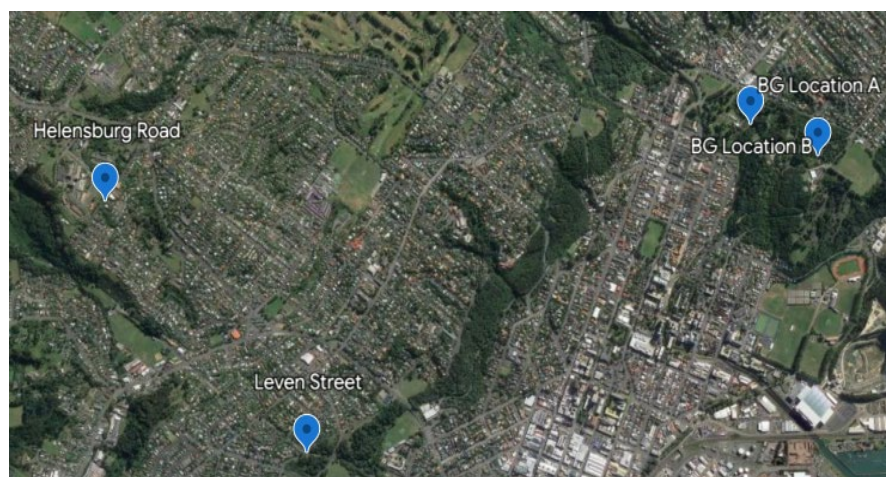


Figure 2. Location of four nesting sites in Dunedin. BG short for Botanic Gardens. Image taken from Google Earth Pro.



Figure 3. Leven Street nesting site. Clay bank with tussock grasses. Photo: Zhuali Lim.



Figure 4. House in Helensburgh Road: Nesting tunnels between the bricks in the garden.

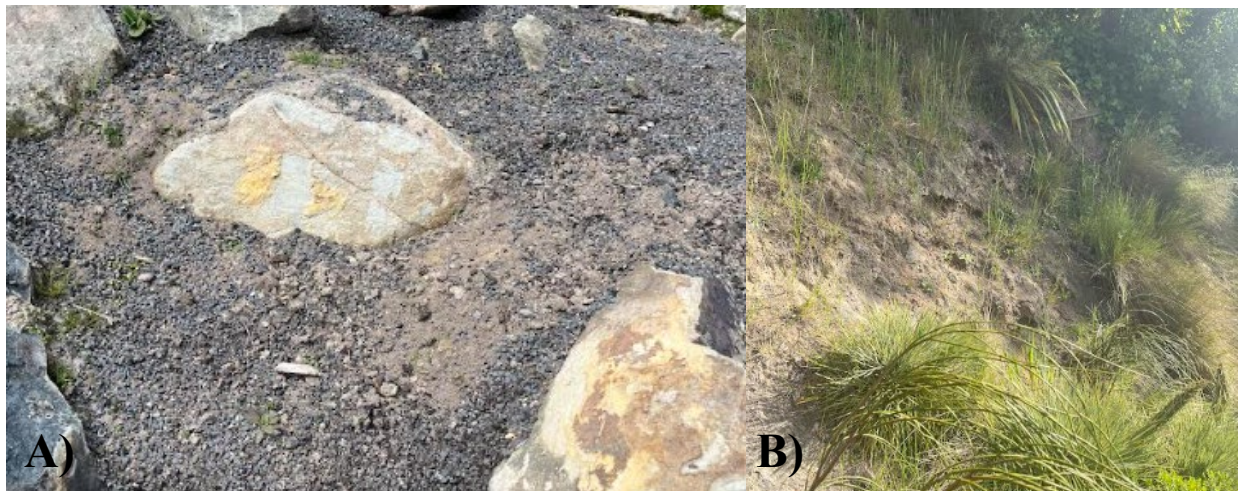


Figure 5. Nesting sites in the Dunedin Botanic Gardens: (A) Nesting site of Location A. Nesting tunnels on the rocky slope; (B) Nesting site of Location B. Nesting tunnels on the slope which consisted of loose soil.

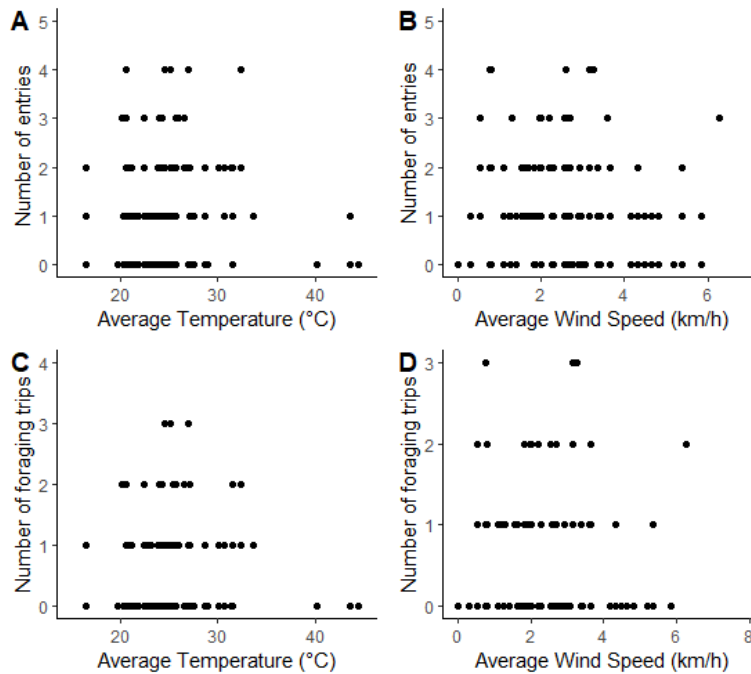


Figure 6. A and B show the relationship between the number of entries by *Lasioglossum sordidum* females observed and wind speed and temperature. C and D show relationship between the number of foraging trips of *L. sordidum* females and both environmental factors as independent variables. Botanic Gardens A ($n(\text{entries}) = 155$, $n(\text{foraging trips}) = 49$), Leven Street ($n(\text{entries}) = 82$, $n(\text{foraging trips}) = 48$).

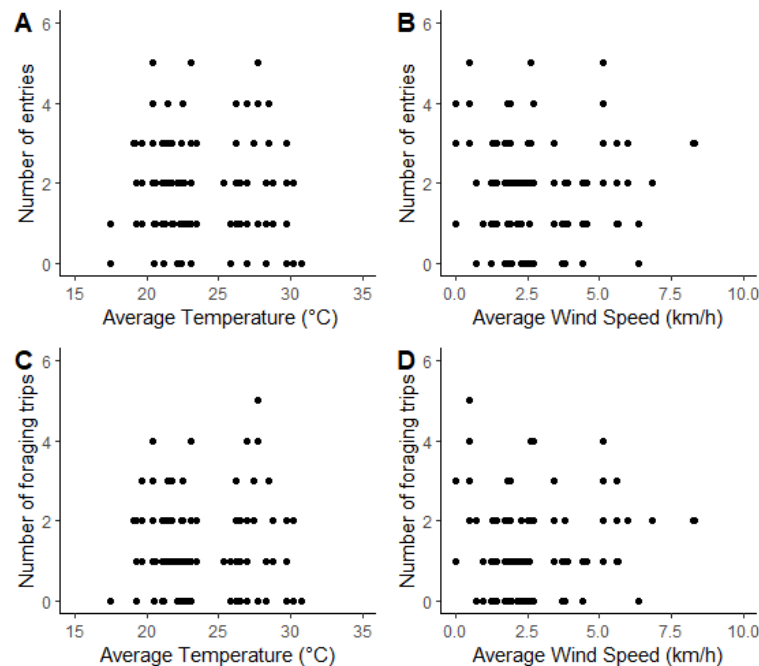


Figure 7. A and B show the relationship between the number of entries by *Nesocolletes fulvescens* females and temperature and wind speed. C and D show the relationship between the number of foraging trips of *N. fulvescens* females and both temperature and wind speed as independent variables. Botanic Gardens B ($n(\text{entries}) = 51$, $n(\text{foraging trips}) = 232$), Leven Street ($n(\text{entries}) = 82$, $n(\text{foraging trips}) = 165$).

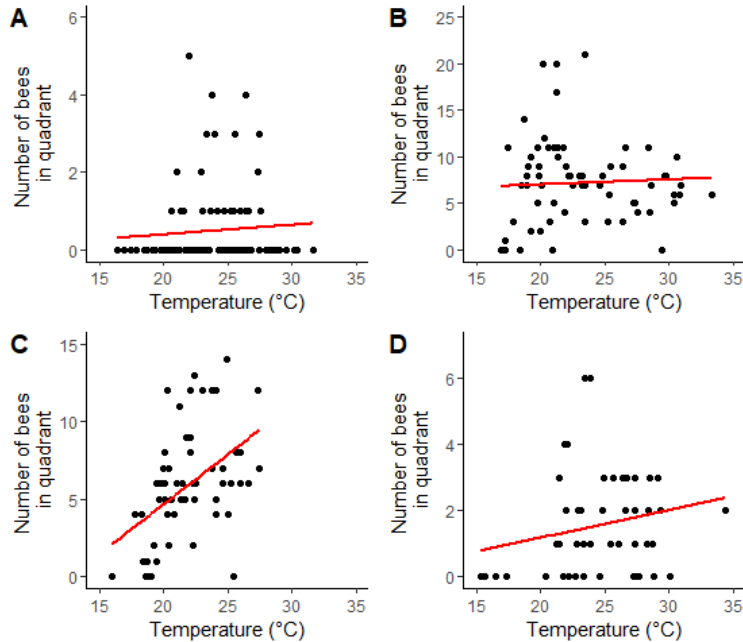


Figure 8. The relationship between the number of bees per quadrat and ambient temperature recorded throughout the day across all four nesting sites: A) Helensburgh Road (total $n = 92$ quadrats, $R^2 = 0.010$, $p = 0.346$); B) Leven Street (total $n = 70$ quadrats, $R^2 = 0.049$, $p = 0.064$); C) Botanic Gardens A (total $n = 58$ quadrats, $R^2 = 0.246$, $p < 0.001$); D) Botanic Gardens B (total $n = 49$ quadrats, $R^2 = 0.087$, $p = 0.040$).

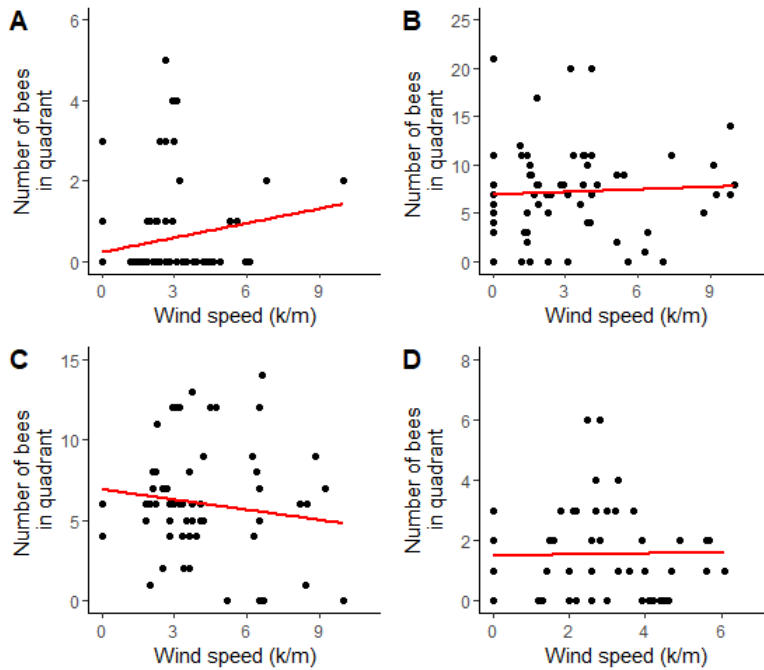


Figure 9. The relationship between the number of bees per quadrat and wind speed recorded throughout the day across all four nesting sites: A) Helensburgh Road (total $n = 92$ quadrats, $R^2 = 0.072$, $p = 0.009$); B) Leven Street (total $n = 70$ quadrats, $R^2 = 0.002$, $p = 0.682$); C) Botanic Gardens A (total $n = 58$ quadrats, $R^2 = 0.103$, $p = 0.014$); D) Botanic Gardens B (total $n = 49$ quadrats, $R^2 = 0.004$, $p = 0.670$).