***Supplementary material***

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*Supplementary material*

**Figure S1:** Mean proportion of insects captured at each one of the three locations

**Table S1:** Study sites and associated plants types

**Table S2**: Data on insect groups sampled at different sampling times

**Table** **S3.** Raw counts tabulated in an electronic spreadsheet format.

**Table S4.** Results of the pairwise comparison of insect captures at three locations per order.

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Analysis of three locations: Remnant native habitat (Location 1= A), University campus (Location 2= B) and Residential urban areas (Location 3=C)

We selected a model including order, location and an interaction between these two factors as the best model describing the observed proportion of insect captures classified at order level. The selected model has a generalised coefficient of determination (*R2*) = 0.899 with an over-dispersion (ø) = 3.88. The location x order interaction term was found significant after accounting for the over-dispersion (*F* = 6.19, *p* < 0.001), so no further model reduction was possible.

Mean proportion of captures at each one of the three sampled sites per order level are graphically summarised in Figure S1.



Figure S1: Mean proportion of insects captured at each one of the three locations considered for this study: urban with remnant native vegetation (location A, white bars), university campus (location B, cross bars), and urban with alien vegetation (location C, dark grey bars); sorted by order. Insect order is indicated on the x-axis: Araneae (A), Coleoptera (C), Diptera (D), Hymenoptera (H), Lepidoptera (L), and Orthoptera (O). Vertical error bars represent the 95 % confidence interval for each mean proportion. Horizontal bars indicate the significance of the comparison between mean proportion of captures between location pairs. Lower bar location A/B comparison, middle bar location A/C comparison, and upper bar location B/C comparison. \*\*\* significant at α = 0.001, \*\* significant at α = 0.01, \* significant at α = 0.05. P-values were adjusted for multiple comparisons using Tukey’s Honestly Significant Difference (HSD). See Table S4, below, for details on the statistical pairwise comparison.

**Table S1.** Study sites and associated plants types. Latitude/Longitude of the study sites where insect samplings were conducted during the Australian summer 2016. Site 1–2 is native habitat (Location 1), site 3 is mixed plant habitat at Monash University (Location 2) whereas site 4–5 is residential area with introduced Alien garden plant habitat (Location 3), see above in study area sections.

**Locations Study site (s) Vegetation Latitude Longitude**

1 1. Jock Marshal Reserves Only Native -37°54ʹ 31.75” S 145°08ʹ 23.51”E 2. Indigenous gardens Only Native -37°54ʹ 28.09” S 145°08ʹ 14.46”E

2 3. Monash University Mixed plants -37°54ʹ37.48” S 145°08ʹ 59.89”E

(native + garden plants)

3 4. Clayton Introduced garden plants -37°55ʹ 07.12” S 145°06ʹ53.89” E

5. Mt Waverly Introduced garden plants -37°53ʹ 02.87” S 145°07ʹ33.13” E

**Table S2**: Raw data of different insects’ groups sampled at different sampling times. Time: t1= 150-17 February, t2 = 29 February - 2 March, t3=14-18March. All data collected in the year 2016. A= Urban native habitat with native plants; B= built habitat with dominant native plants; C= Urban residential habitat with alien plants. Site code: S1=JMR, S2=Indigenous garden, S3= Monash Uni, S4 =Clayton, S5= Waverly Road. Detail also provided in Table 1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Date | Time.code | Location.code | Site.  code | Site | Order.  code | order | Total  count |
| 15-17Feb16 | t1 | A | S1 | JMR | A | Araneae | 0 |
| 15-17Feb16 | t1 | A | S1 | JMR | C | Coleoptera | 4 |
| 15-17Feb16 | t1 | A | S1 | JMR | D | Diptera | 60 |
| 15-17Feb16 | t1 | A | S1 | JMR | H | Hymenoptera | 96 |
| 15-17Feb16 | t1 | A | S1 | JMR | L | Lepidoptera | 18 |
| 15-17Feb16 | t1 | A | S1 | JMR | O | Orthoptera | 1 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | A | Araneae | 2 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | C | Coleoptera | 20 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | D | Diptera | 105 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | H | Hymenoptera | 209 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | L | Lepidoptera | 5 |
| 29Feb-2Mar16 | t2 | A | S1 | JMR | O | Orthoptera | 0 |
| 14-18Mar16 | t3 | A | S1 | JMR | A | Araneae | 5 |
| 14-18Mar16 | t3 | A | S1 | JMR | C | Coleoptera | 3 |
| 14-18Mar16 | t3 | A | S1 | JMR | H | Hymenoptera | 133 |
| 14-18Mar16 | t3 | A | S1 | JMR | L | Lepidoptera | 13 |
| 14-18Mar16 | t3 | A | S1 | JMR | O | Orthoptera | 2 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | A | Araneae | 0 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | C | Coleoptera | 2 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | D | Diptera | 19 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | H | Hymenoptera | 56 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | L | Lepidoptera | 2 |
| 15-17Feb16 | t1 | A | S2 | Indigenous garden | O | Orthoptera | 0 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | A | Araneae | 0 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | C | Coleoptera | 5 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | D | Diptera | 42 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | H | Hymenoptera | 24 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | L | Lepidoptera | 11 |
| 29Feb-2Mar16 | t2 | A | S2 | Indigenous garden | O | Orthoptera | 1 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | A | Araneae | 0 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | C | Coleoptera | 9 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | D | Diptera | 32 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | H | Hymenoptera | 64 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | L | Lepidoptera | 7 |
| 14-18Mar16 | t3 | A | S2 | Indigenous garden | O | Orthoptera | 0 |
| Date | Time.code | Location.code | Site.  code | Site | Order.  code | order | Total  count |
| 15-17Feb16 | t1 | B | S3 | Monash Uni | C | Coleoptera | 1 |
| 15-17Feb16 | t1 | B | S3 | Monash Uni | D | Diptera | 28 |
| 15-17Feb16 | t1 | B | S3 | Monash Uni | H | Hymenoptera | 2 |
| 15-17Feb16 | t1 | B | S3 | Monash Uni | L | Lepidoptera | 0 |
| 15-17Feb16 | t1 | B | S3 | Monash Uni | O | Orthoptera | 0 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | A | Araneae | 6 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | C | Coleoptera | 12 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | D | Diptera | 18 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | H | Hymenoptera | 3 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | L | Lepidoptera | 0 |
| 29Feb-2Mar16 | t2 | B | S3 | Monash Uni[Newton Apple] | O | Orthoptera | 1 |
| 29Feb-2Mar16 | t3 | B | S3 | Monash Uni[Newton Apple] | A | Araneae | 4 |
| 14-18Mar16 | t3 | B | S3 | Monash Uni[Newton Apple] | C | Coleoptera | 3 |
| 14-18Mar16 | t3 | B | S3 | Monash Uni[Newton Apple] | D | Diptera | 10 |
| 14-18Mar16 | t3 | B | S3 | Monash Uni[Newton Apple] | H | Hymenoptera | 16 |
| 14-18Mar16 | t3 | B | S3 | Monash Uni[Newton Apple] | L | Lepidoptera | 6 |
| 15-17Feb16 | t1 | C | S4 | Clayton | C | Coleoptera | 25 |
| 15-17Feb16 | t1 | C | S4 | Clayton | D | Diptera | 18 |
| 15-17Feb16 | t1 | C | S4 | Clayton | H | Hymenoptera | 22 |
| 15-17Feb16 | t1 | C | S4 | Clayton | L | Lepidoptera | 10 |
| 15-17Feb16 | t1 | C | S4 | Clayton | O | Orthoptera | 0 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | A | Araneae | 0 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | C | Coleoptera | 5 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | D | Diptera | 3 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | H | Hymenoptera | 3 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | L | Lepidoptera | 5 |
| 29Feb-2Mar16 | t2 | C | S4 | Clayton | O | Orthoptera | 0 |
| 14-18Mar16 | t3 | C | S4 | Clayton | A | Araneae | 2 |
| 14-18Mar16 | t3 | C | S4 | Clayton | C | Coleoptera | 8 |
| 14-18Mar16 | t3 | C | S4 | Clayton | D | Diptera | 9 |
| 14-18Mar16 | t3 | C | S4 | Clayton | H | Hymenoptera | 12 |
| 14-18Mar16 | t3 | C | S4 | Clayton | L | Lepidoptera | 6 |
| 14-18Mar16 | t3 | C | S4 | Clayton | O | Orthoptera | 4 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | A | Araneae | 2 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | C | Coleoptera | 3 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | D | Diptera | 24 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | H | Hymenoptera | 9 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | L | Lepidoptera | 12 |
| 15-17Feb16 | t1 | C | S5 | Mt Waverly Road | O | Orthoptera | 0 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | A | Araneae | 1 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | C | Coleoptera | 5 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | D | Diptera | 8 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | H | Hymenoptera | 23 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | L | Lepidoptera | 4 |
| 29Feb-2Mar16 | t2 | C | S5 | Mt Waverly Road | O | Orthoptera | 0 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | A | Araneae | 0 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | C | Coleoptera | 1 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | D | Diptera | 18 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | H | Hymenoptera | 15 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | L | Lepidoptera | 7 |
| 14-18Mar16 | t3 | C | S5 | Mt Waverly Road | O | Orthoptera | 2 |

**Table S4**: Results of the pairwise comparison of insect captures at three locations per order. p-values were adjusted for multiple comparisons using Tukey’s honestly significant difference (HSD) for each order.

| Order | Location pair | Mean difference (95 % CI) | odds-ratio | *z* | p-value |
| --- | --- | --- | --- | --- | --- |
| Araneae | A - B | 2.73 (-3.70, -1.76) | 0.065 | -5.53 | < 0.001\*\*\* |
| A - C | 1.02 (2.18, 0.134) | 0.360 | -1.73 | 0.192 |
| B - C | 1.71 (0.627, 2.72) | 5.52 | 2.79 | < 0.006\*\* |
| Coleoptera | A - B | -1.30 (-1.91, -0.694) | 0.271 | -4.19 | < 0.001\*\*\* |
| A - C | -1.59 (-2.03, -1.15) | 0.204 | -7.09 | < 0.001\*\*\* |
| B - C | -0.284 (-0.899. 0.332) | 0.753 | -0.904 | 0.638 |
| Diptera | A - B | -0.685 (-1.07, -0.297) | 0.504 | -3.46 | 0.002\*\* |
| A - C | 0.106 (-0.186, 0.398) | 1.112 | 0.711 | 0.757 |
| B - C | 0.792 (0.341, 1.24) | 2.21 | 3.45 | 0.002\*\* |
| Hymenoptera | A - B | 1.78 (1.39, 2.16) | 5.91 | 7.12 | < 0.001\*\*\* |
| A - C | 1.05 (0.759, 1.34) | 2.86 | 7.18 | < 0.001\*\*\* |
| B - C | -0.726 (-1.26, -0.187) | 0.484 | -2.64 | 0.023\* |
| Lepidoptera | A - B | 0.051 (-0.814, 0.915) | 1.05 | 0.115 | 0.993 |
| A - C | -1.23 (-1.65, 0.809) | 0.292 | -5.73 | < 0.001\*\*\* |
| B - C | -1.28 (-2.17, -0.397) | 0.292 | -2.84 | 0.012\* |
| Orthoptera | A - B | -2.45 (-3.78, -1.12) | 0.087 | -3.61 | < 0.001\*\*\* |
| A - C | -1.77 (-3.04, -0.499) | 0.170 | -2.73 | 0.018\* |
| B - C | 0.678 (-0.529, 1.89) | 1.97 | 1.10 | 0.514 |

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