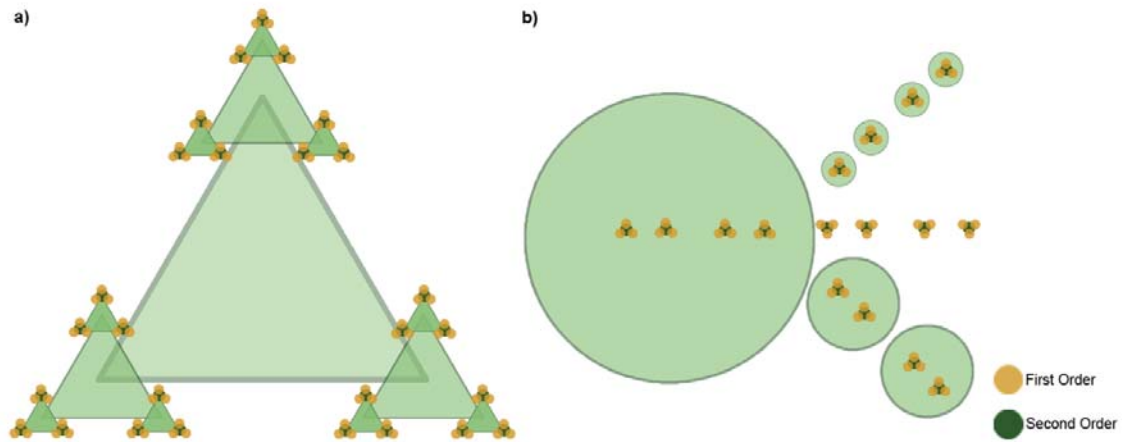


## Supplementary Materials

**Supplementary Table 1** – List of genera involved in analyses. Empty cells represent where data were missing or insufficient to include in analyses containing those data-fields. **Genus** – Generic identification of ants; **Morphospecies** – The number of morphospecies in the community dataset from soil pits; **Individuals** – The number of individuals in the *CTmax* dataset; ***CTmax* (°C)** – Upper thermal tolerance  $\pm$  standard error; **Primary** – Number of individuals occurring in primary forest community samples; **Logged** – Number of individuals occurring in logged forest community samples; **Oil Palm** – Number of individuals occurring in oil palm plantation community samples; **Surface Foraging** – Whether or not the genus occurred in the ant bait card data set;  **$\delta^{15}\text{N}$  (‰)** – The stable isotope value of  $\delta^{15}\text{N}$ , representing the trophic position of a genus, taken from existing literature (Blüthgen et al., 2003; Pfeiffer et al., 2013; Woodcock et al., 2013). Higher values indicate higher levels of predation, and lower values indicate higher levels of herbivory. Values with (c) indicate those taken from canopy rather than ground layer ants; **Weber's Length (mm)** – A measurement diagonally across the mesosoma of an ant, used commonly as a measure of overall body size, measured for ants observed and collected from soil pits.

Genus	Morphospecies ( <i>n</i> )	Individuals	<i>CTmax</i> (°C)	Primary	Logged	Oil Palm	Surface Foraging	$\delta^{15}\text{N}$ (‰)	Weber's Length (mm)
<i>Acanthomyrmex</i>	-	10	42 ( $\pm$ 0.33)	-	-	-	Yes	5.19	-
<i>Aenictus</i>	3	67	42.5 ( $\pm$ 0.13)	1	3	0	Yes	4.67	1.05
<i>Camponotus</i>	9	291	44.3( $\pm$ 0.06)	1	9	10	Yes	2.79	1.66
<i>Cardiocondyla</i>	2	48	46.4 ( $\pm$ 0.15)	0	16	15	Yes	4.71	0.41
<i>Carebara</i>	4	18	40.4 ( $\pm$ 0.25)	10	73	0	Yes	6.78	0.36
<i>Centromyrmex</i>	2	38	40.2 ( $\pm$ 0.18)	1	2	0	Yes	-	1.37
<i>Crematogaster</i>	19	264	45 ( $\pm$ 0.07)	25	158	84	Yes	4.8	0.74
<i>Cryptopone</i>	1	10	41.6 ( $\pm$ 0.33)	2	15	8	No	-	0.64
<i>Diacamma</i>	-	19	40.4 ( $\pm$ 0.24)	-	-	-	Yes	5.65	-
<i>Dolichoderus</i>	8	128	44.4 ( $\pm$ 0.09)	1	33	6	Yes	2.61	1.33
<i>Echinopla</i>	-	15	44.7 ( $\pm$ 0.27)	-	-	-	Yes	2.34 (c)	-
<i>Euprenolepis</i>	2	20	41.2 ( $\pm$ 0.24)	34	3	0	Yes	-	1.12
<i>Hypoponera</i>	28	10	41.9 ( $\pm$ 0.33)	35	96	13	No	-	0.92
<i>Leptogenys</i>	5	54	40 ( $\pm$ 0.14)	5	30	1	Yes	6.56	1.8
<i>Lophomyrmex</i>	3	40	42.4 ( $\pm$ 0.17)	8	686	179	Yes	5.02	0.8
<i>Monomorium</i>	4	13	45.8 ( $\pm$ 0.29)	1	4	12	Yes	5.83	0.39
<i>Myrmecina</i>	8	20	41.9 ( $\pm$ 0.24)	4	11	27	Yes	7.13	0.79
<i>Myrmicaria</i>	-	62	43.2 ( $\pm$ 0.133)	-	-	-	Yes	3.95	-
<i>Nylanderia</i>	7	29	43.9 ( $\pm$ 0.2)	7	11	37	Yes	4.73	0.78
<i>Ochetellus</i>	1	7	46.9 ( $\pm$ 0.4)	0	0	11	Yes	-	0.56
<i>Odontomachus</i>	-	19	40.9 ( $\pm$ 0.24)	-	-	-	Yes	5.72	-
<i>Odontoponera</i>	2	37	40.8 ( $\pm$ 0.17)	13	1	1	Yes	6.14	3.02
<i>Oecophylla</i>	-	19	44.8 ( $\pm$ 0.24)	-	-	-	Yes	4.1	-
<i>Pachycondyla</i>	18	54	40.4 ( $\pm$ 0.14)	48	45	5	Yes	6.99	2.19
<i>Paraparatrechina</i>	-	46	42.1 ( $\pm$ 0.17)	-	-	-	Yes	4.73	-
<i>Pheidole</i>	38	72	41 ( $\pm$ 0.13)	206	305	9	Yes	5.97	0.72
<i>Pheidologeton</i>	7	56	40.9 ( $\pm$ 0.18)	168	683	126	Yes	5.98	0.65
<i>Plageolepis</i>	2	190	44.85 ( $\pm$ 0.14)	0	144	155	Yes	6.2	0.41
<i>Polyrhachis</i>	-	50	44.3 ( $\pm$ 0.15)	-	-	-	Yes	2.06	-
<i>Ponera</i>	8	10	41.2 ( $\pm$ 0.33)	19	34	1	No	-	0.77
<i>Prenolepis</i>	-	50	43.9 ( $\pm$ 0.15)	-	-	-	Yes	4.23	-
<i>Pristomyrmex</i>	1	22	43.7 ( $\pm$ 0.22)	1	0	1	Yes	6.44	0.75
<i>Rhoptromyrmex</i>	-	28	41.5 ( $\pm$ 0.21)	-	-	-	Yes	6.68 (c)	0.6
<i>Tapinoma</i>	5	19	44.8 ( $\pm$ 0.24)	1	11	68	Yes	7.58	0.93
<i>Technomyrmex</i>	11	13	43.5 ( $\pm$ 0.29)	5	36	12	Yes	3.81	-
<i>Tetramarium</i>	20	166	43.5 ( $\pm$ 0.08)	59	120	53	Yes	5.73	0.79
<i>Tetraoponera</i>	-	38	45.8 ( $\pm$ 0.17)	-	-	-	Yes	3	-



**Supplementary Figure 1** – Diagram showing the spatial arrangement of first and second order sampling points within **a)** continuous habitats (primary forests and oil palm) and **b)** experimental logged forest fragments at the SAFE project. At the time of sampling, logged forest plots were also within continuous forest as the SAFE project forests were awaiting clearance logging. Second order points are separated by a minimum of 178 m, and first order points exist in a triangle separated by 56 m surrounding each second order point. Ant community data was collected at  $n = 57$  second order points, ant activity data at  $n = 264$  first order points and microclimate data at  $n = 244$  first order sampling points.