

**Supplementary Table 1:** Ethogram of most commonly observed behaviours for the animals most frequently observed to eat at giving-up density stations: brown antechinus (*Antechinus stuartii*), northern brown bandicoot (*Isodon macrourus*), common brushtail possum (*Trichosurus vulpecula*), brown and black rats (*Rattus norvegicus*, *R. rattus*), and birds (as detailed in Fardell et al., 2021a).

| Behaviour                       | Description                                                                                                                                                                                                                                        |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Foraging around outside of bowl | Animal is sniffing and foraging on ground outside of bowl, including eating away from bowl – after foraging from bowl (includes time eating).                                                                                                      |
| Foraging from edge of bowl      | Animal is foraging in the bowl, including sniffing through materials, from a perched on side of bowl position, and does not have full body in the bowl (includes time eating).                                                                     |
| Foraging in bowl                | Animal is foraging inside the bowl, including sniffing through materials, with full body inside the bowl (includes time eating).                                                                                                                   |
| Inspecting bowl                 | Sniffs and walks around bowl from outside and edge looking in, does not dig, sniff, or forage inside.                                                                                                                                              |
| Inspecting treatment            | Sniffs and looks closely directly at towel containing the treatment.                                                                                                                                                                               |
| Vigilant                        | Animal suddenly stops a behaviour to actively look and listen, head and upper body may be upright or remain horizontal and stiff, in both positions, ears, eyes, and nose are alert and active.                                                    |
| Movement                        | Animal moves around the field of view either walking, running, jumping and or climbing.                                                                                                                                                            |
| Cleans self or other            | Licks / chews / scratches at stomach ventral side, feet or hands, licks hands and then brushes at head / ears, either on self or to other, includes close sniffing of other individual.                                                            |
| Fights other                    | Chases, launches at, or rears and attacks other individual.                                                                                                                                                                                        |
| Rapid exit                      | Animal exits bowl and moves off screen suddenly and very quickly, is not measured in seconds to leave screen as is subjective to species instead this is recorded as a question answer (yes, no, or n/a- if still in bowl, or never entered bowl). |

**Supplementary Table 2:** Generalised linear mixed models with zero inflation and dispersion parameter results, for giving-up density (GUD) responses under the explanatory variables of treatment and environment. Random effects were survey session (1-4), survey night (1-6), and station number (1-24 per environment). Surveys were conducted across an urban disturbance gradient between January and September of 2019. Estimates given are on the log scale. Significant results are bold.

| <b>Conditional model (estimate on log scale):</b>     |                 |                   |                |                    |
|-------------------------------------------------------|-----------------|-------------------|----------------|--------------------|
|                                                       | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b> |
| <i>(Intercept: control, far)</i>                      | 0.25            | 0.25              | 1.00           | 0.3194000          |
| Treatment: cat                                        | 0.29            | 0.26              | 1.11           | 0.2667000          |
| <b>Treatment: cat with disturbance</b>                | <b>0.99</b>     | <b>0.22</b>       | <b>4.60</b>    | <b>0.0000042</b>   |
| <b>Treatment: dist</b>                                | <b>0.48</b>     | <b>0.20</b>       | <b>2.36</b>    | <b>0.0183000</b>   |
| Treatment: fox                                        | 0.38            | 0.26              | 1.45           | 0.1463000          |
| <b>Treatment: fox with disturbance</b>                | <b>0.89</b>     | <b>0.21</b>       | <b>4.32</b>    | <b>0.0000159</b>   |
| <b>Treatment: pre-treatment</b>                       | <b>0.54</b>     | <b>0.22</b>       | <b>2.45</b>    | <b>0.0143000</b>   |
| <b>Location: mid</b>                                  | <b>1.33</b>     | <b>0.21</b>       | <b>6.37</b>    | <b>0.0000000</b>   |
| Location: close                                       | 0.47            | 0.27              | 1.75           | 0.0805000          |
| Treatment: cat, Location: mid                         | -0.19           | 0.31              | -0.61          | 0.5447000          |
| <b>Treatment: cat with disturbance, Location: mid</b> | <b>-0.54</b>    | <b>0.27</b>       | <b>-2.00</b>   | <b>0.0458000</b>   |
| Treatment: disturbance, Location: mid                 | 0.01            | 0.26              | 0.04           | 0.9695000          |
| Treatment: fox, Location: mid                         | -0.25           | 0.31              | -0.79          | 0.4290000          |
| <b>Treatment: fox with disturbance, Location: mid</b> | <b>-0.51</b>    | <b>0.26</b>       | <b>-1.98</b>   | <b>0.0478000</b>   |
| Treatment: pre-treatment, Location: mid               | -0.09           | 0.22              | -0.41          | 0.6816000          |
| Treatment: cat, Location: close                       | -0.17           | 0.36              | -0.48          | 0.6314000          |
| Treatment: cat with disturbance, Location: close      | -0.51           | 0.33              | -1.53          | 0.1258000          |
| Treatment: disturbance, Location: close               | -0.09           | 0.32              | -0.28          | 0.7811000          |
| Treatment: fox, Location: close                       | -0.41           | 0.38              | -1.10          | 0.2702000          |
| Treatment: fox with disturbance, Location: close      | -0.60           | 0.33              | -1.82          | 0.0692000          |
| Treatment: pre-treatment, Location: close             | 0.02            | 0.31              | 0.08           | 0.9388000          |
| <b>Zero-inflation model:</b>                          |                 |                   |                |                    |
|                                                       | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b> |
| <i>(Intercept: control, far)</i>                      | -16.84          | 1659.67           | -0.01          | 0.9920000          |
| Treatment: cat                                        | 14.51           | 1659.67           | 0.01           | 0.9930000          |
| Treatment: cat with disturbance                       | 15.04           | 1659.67           | 0.01           | 0.9930000          |
| Treatment: dist                                       | -11.04          | 408617.22         | 0.00           | 1.0000000          |
| Treatment: fox                                        | 15.15           | 1659.67           | 0.01           | 0.9930000          |
| Treatment: fox with disturbance                       | 13.94           | 1659.67           | 0.01           | 0.9930000          |
| Treatment: pre-treatment                              | 15.83           | 1659.67           | 0.01           | 0.9920000          |
| Location: mid                                         | -28.54          | 297554.41         | 0.00           | 1.0000000          |
| Location: close                                       | -1.43           | 1.33              | -1.07          | 0.2830000          |
| <b>Dispersion model:</b>                              |                 |                   |                |                    |
|                                                       | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b> |
| <i>(Intercept: session 1, far)</i>                    | -0.55           | 0.26              | -2.11          | 0.0345000          |
| <b>Session 2</b>                                      | <b>0.16</b>     | <b>0.28</b>       | <b>0.56</b>    | <b>0.5790000</b>   |
| <b>Session 3</b>                                      | <b>1.02</b>     | <b>0.21</b>       | <b>4.81</b>    | <b>0.0000015</b>   |
| Session 4                                             | 0.42            | 0.32              | 1.31           | 0.1907000          |
| <b>Location: mid</b>                                  | <b>1.57</b>     | <b>0.28</b>       | <b>5.64</b>    | <b>0.0000000</b>   |
| <b>Location: close</b>                                | <b>2.01</b>     | <b>0.26</b>       | <b>7.78</b>    | <b>0.0000000</b>   |

**Supplementary Table 3:** Generalised linear mixed models with zero inflation and dispersion parameter results, for the number of fauna visitors to giving-up density stations under the interaction of the explanatory variables of treatment and environment. Random effects were survey session (1-4), survey night (1-6), and station number (1-24 per environment). Surveys were conducted across an urban disturbance gradient between January and September of 2019. Estimates given are on the log scale. Significant results are bold.

| <b>Conditional model (estimate on log scale):</b>       |                 |                   |                |                     |
|---------------------------------------------------------|-----------------|-------------------|----------------|---------------------|
|                                                         | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b>  |
| <i>(Intercept: control, far)</i>                        | <b>2.48</b>     | <b>0.09</b>       | <b>26.19</b>   | <b>&lt; 0.00001</b> |
| Treatment: cat                                          | -0.06           | 0.08              | -0.79          | 0.432658            |
| <b>Treatment: cat with disturbance</b>                  | <b>-0.30</b>    | <b>0.09</b>       | <b>-3.36</b>   | <b>0.000793</b>     |
| <b>Treatment: disturbance</b>                           | <b>-0.28</b>    | <b>0.09</b>       | <b>-3.19</b>   | <b>0.001437</b>     |
| Treatment: fox                                          | 0.06            | 0.08              | 0.71           | 0.478136            |
| <b>Treatment: fox with disturbance</b>                  | <b>-0.17</b>    | <b>0.08</b>       | <b>-2.05</b>   | <b>0.040596</b>     |
| Treatment: pre-treatment                                | 0.17            | 0.09              | 1.87           | 0.061515            |
| <b>Location: mid</b>                                    | <b>-0.79</b>    | <b>0.13</b>       | <b>-6.30</b>   | <b>&lt; 0.00001</b> |
| <b>Location: close</b>                                  | <b>-1.13</b>    | <b>0.13</b>       | <b>-8.46</b>   | <b>&lt; 0.00001</b> |
| Treatment: cat, Location: mid                           | 0.01            | 0.14              | 0.04           | 0.969212            |
| Treatment: cat with disturbance, Location: mid          | -0.21           | 0.16              | -1.39          | 0.165481            |
| Treatment: disturbance, Location: mid                   | -0.16           | 0.16              | -1.05          | 0.292697            |
| Treatment: fox, Location: mid                           | -0.08           | 0.14              | -0.56          | 0.576497            |
| <b>Treatment: fox with disturbance, Location: mid</b>   | <b>-0.41</b>    | <b>0.15</b>       | <b>-2.70</b>   | <b>0.006925</b>     |
| <b>Treatment: pre-treatment, Location: mid</b>          | <b>-0.44</b>    | <b>0.10</b>       | <b>-4.21</b>   | <b>0.000026</b>     |
| Treatment: cat, Location: mid                           | 0.21            | 0.14              | 1.49           | 0.135750            |
| <b>Treatment: cat with disturbance, Location: close</b> | <b>0.39</b>     | <b>0.15</b>       | <b>2.59</b>    | <b>0.009698</b>     |
| <b>Treatment: disturbance, Location: close</b>          | <b>0.33</b>     | <b>0.15</b>       | <b>2.15</b>    | <b>0.031300</b>     |
| <b>Treatment: fox, Location: close</b>                  | <b>0.40</b>     | <b>0.14</b>       | <b>2.86</b>    | <b>0.004209</b>     |
| <b>Treatment: fox with disturbance, Location: close</b> | <b>0.28</b>     | <b>0.15</b>       | <b>1.92</b>    | <b>0.054387</b>     |
| <b>Treatment: pre-treatment, Location: close</b>        | <b>0.37</b>     | <b>0.11</b>       | <b>3.38</b>    | <b>0.000726</b>     |
| <b>Zero-inflation model:</b>                            |                 |                   |                |                     |
|                                                         | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b>  |
| <i>(Intercept: control, far)</i>                        | -19.09          | 1300.76           | -0.02          | 0.988000            |
| Treatment: cat                                          | 14.87           | 1300.76           | 0.01           | 0.991000            |
| Treatment: cat with disturbance                         | 14.04           | 1300.77           | 0.01           | 0.991000            |
| Treatment: disturbance                                  | 14.96           | 1300.76           | 0.01           | 0.991000            |
| Treatment: fox                                          | -8.15           | 60526.69          | 0.00           | 1.000000            |
| Treatment: fox with disturbance                         | -5.65           | 26984.81          | 0.00           | 1.000000            |
| Treatment: pre-treatment                                | 14.93           | 1300.76           | 0.01           | 0.991000            |
| Location: mid                                           | 0.85            | 0.64              | 1.33           | 0.185000            |
| Location: close                                         | 0.14            | 0.72              | 0.20           | 0.844000            |
| <b>Dispersion model:</b>                                |                 |                   |                |                     |
|                                                         | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b>  |
| <i>(Intercept: session 1, far)</i>                      | <b>0.61</b>     | <b>0.22</b>       | <b>2.82</b>    | <b>0.004790</b>     |
| <b>Session 2</b>                                        | <b>-0.98</b>    | <b>0.35</b>       | <b>-2.85</b>   | <b>0.004340</b>     |
| <b>Session 3</b>                                        | <b>-2.28</b>    | <b>0.72</b>       | <b>-3.17</b>   | <b>0.001510</b>     |
| Session 4                                               | -0.46           | 0.25              | -1.82          | 0.068670            |
| Location: mid                                           | -0.45           | 0.32              | -1.39          | 0.165610            |
| <b>Location: close</b>                                  | <b>-0.62</b>    | <b>0.24</b>       | <b>-2.64</b>   | <b>0.008260</b>     |

**Supplementary Table 4:** Generalised linear mixed models with zero inflation and dispersion parameter results, for the average time spent foraging at giving-up density feeding stations under the explanatory variables of treatment and environment. Random effects were survey session (1-4), survey night (1-6), and station number (1-24 per environment). Surveys were conducted across an urban disturbance gradient between January and September of 2019. Estimates given are on the log scale. Significant results are bold.

| <b>Conditional model (estimate on log scale):</b>  |                 |                   |                |                    |
|----------------------------------------------------|-----------------|-------------------|----------------|--------------------|
|                                                    | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b> |
| <b>(Intercept: control, far, brown antechinus)</b> | -0.23           | 0.19              | -1.20          | 0.22844            |
| Treatment: cat                                     | -0.20           | 0.11              | -1.85          | 0.06463            |
| Treatment: cat with disturbance                    | 0.00            | 0.12              | -0.02          | 0.98349            |
| <b>Treatment: disturbance</b>                      | <b>0.33</b>     | <b>0.11</b>       | <b>2.94</b>    | <b>0.00333</b>     |
| Treatment: fox                                     | -0.05           | 0.10              | -0.50          | 0.61460            |
| Treatment: fox with disturbance                    | 0.20            | 0.11              | 1.84           | 0.06523            |
| Treatment: pre-treatment                           | -0.37           | 0.24              | -1.55          | 0.12043            |
| Location: mid                                      | 0.05            | 0.14              | 0.36           | 0.71883            |
| <b>Location: close</b>                             | <b>0.28</b>     | <b>0.15</b>       | <b>1.93</b>    | <b>0.05426</b>     |
| <b>Species: northern brown bandicoot</b>           | <b>1.04</b>     | <b>0.06</b>       | <b>17.04</b>   | <b>0.00000</b>     |
| <b>Species: bird</b>                               | <b>-0.30</b>    | <b>0.07</b>       | <b>-4.15</b>   | <b>0.00003</b>     |
| <b>Species: common brushtail possum</b>            | <b>-1.79</b>    | <b>0.22</b>       | <b>-8.08</b>   | <b>0.00000</b>     |
| <b>Species: brown and black rats</b>               | <b>0.18</b>     | <b>0.04</b>       | <b>4.40</b>    | <b>0.00001</b>     |
| Treatment: cat, Location: mid                      | 0.11            | 0.19              | 0.57           | 0.56926            |
| Treatment: cat with disturbance, Location: mid     | 0.40            | 0.21              | 1.88           | 0.05967            |
| Treatment: disturbance, Location: mid              | -0.26           | 0.21              | -1.23          | 0.21752            |
| Treatment: fox, Location: mid                      | -0.20           | 0.19              | -1.08          | 0.27989            |
| Treatment: fox with disturbance, Location: mid     | 0.19            | 0.21              | 0.94           | 0.34812            |
| Treatment: pre-treatment, Location: mid            | 0.10            | 0.14              | 0.67           | 0.50492            |
| Treatment: cat, Location: close                    | -0.26           | 0.18              | -1.43          | 0.15387            |
| Treatment: cat with disturbance, Location: close   | -0.08           | 0.20              | -0.38          | 0.70311            |
| Treatment: disturbance, Location: close            | -0.28           | 0.19              | -1.46          | 0.14462            |
| Treatment: fox, Location: close                    | -0.08           | 0.18              | -0.45          | 0.64989            |
| Treatment: fox with disturbance, Location: close   | -0.23           | 0.19              | -1.21          | 0.22774            |
| <b>Treatment: pre-treatment, Location: close</b>   | <b>-0.74</b>    | <b>0.14</b>       | <b>-5.33</b>   | <b>0.00000</b>     |
| <b>Zero-inflation model:</b>                       |                 |                   |                |                    |
|                                                    | <b>Estimate</b> | <b>Std. Error</b> | <b>z value</b> | <b>Pr(&gt; z )</b> |
| <b>(Intercept: control, brown antechinus)</b>      | -2.98           | 0.33              | -9.16          | 0.00000            |
| Treatment: cat                                     | 0.26            | 0.43              | 0.62           | 0.53568            |
| Treatment: cat with disturbance                    | -0.30           | 0.48              | -0.62          | 0.53841            |
| Treatment: disturbance                             | -0.63           | 0.51              | -1.25          | 0.21018            |
| Treatment: fox                                     | -0.10           | 0.44              | -0.22          | 0.82563            |
| Treatment: fox with disturbance                    | -0.05           | 0.46              | -0.11          | 0.91216            |
| Treatment: pre-treatment                           | -0.20           | 0.33              | -0.61          | 0.54456            |
| <b>Species: northern brown bandicoot</b>           | <b>-2.38</b>    | <b>0.93</b>       | <b>-2.57</b>   | <b>0.01028</b>     |
| Species: bird                                      | 0.29            | 0.32              | 0.90           | 0.37005            |
| <b>Species: common brushtail possum</b>            | <b>4.98</b>     | <b>0.25</b>       | <b>19.67</b>   | <b>0.00000</b>     |
| <b>Species: brown and black rats</b>               | <b>-0.78</b>    | <b>0.29</b>       | <b>-2.70</b>   | <b>0.00696</b>     |

Dispersion model:

|                                                               | Estimate     | Std. Error  | z value       | Pr(> z )       |
|---------------------------------------------------------------|--------------|-------------|---------------|----------------|
| <i>(Intercept: session 1, control, far, brown antechinus)</i> | <b>2.16</b>  | <b>0.13</b> | <b>16.13</b>  | <b>0.00000</b> |
| Session 2                                                     | <b>0.25</b>  | <b>0.09</b> | <b>2.71</b>   | <b>0.00682</b> |
| Session 3                                                     | <b>0.26</b>  | <b>0.09</b> | <b>2.85</b>   | <b>0.00443</b> |
| Session 4                                                     | <b>0.34</b>  | <b>0.09</b> | <b>3.70</b>   | <b>0.00022</b> |
| Treatment: cat                                                | <b>-0.29</b> | <b>0.15</b> | <b>-1.92</b>  | <b>0.05457</b> |
| Treatment: cat with disturbance                               | <b>-0.46</b> | <b>0.15</b> | <b>-3.01</b>  | <b>0.00263</b> |
| Treatment: disturbance                                        | -0.25        | 0.16        | -1.59         | 0.11120        |
| Treatment: fox                                                | -0.05        | 0.15        | -0.31         | 0.75375        |
| Treatment: fox with disturbance                               | -0.24        | 0.16        | -1.55         | 0.12067        |
| Treatment: pre-treatment                                      | <b>-0.33</b> | <b>0.11</b> | <b>-2.84</b>  | <b>0.00452</b> |
| Location: mid                                                 | <b>-0.96</b> | <b>0.08</b> | <b>-12.61</b> | <b>0.00000</b> |
| Location: close                                               | <b>-0.82</b> | <b>0.08</b> | <b>-9.94</b>  | <b>0.00000</b> |
| Species: northern brown bandicoot                             | <b>0.47</b>  | <b>0.10</b> | <b>4.60</b>   | <b>0.00000</b> |
| Species: bird                                                 | <b>-1.44</b> | <b>0.10</b> | <b>-15.09</b> | <b>0.00000</b> |
| Species: common brushtail possum                              | <b>-0.76</b> | <b>0.23</b> | <b>-3.32</b>  | <b>0.00089</b> |
| Species: brown and black rats                                 | <b>0.36</b>  | <b>0.08</b> | <b>4.63</b>   | <b>0.00000</b> |

**Supplementary Table 5:** Generalised linear mixed models with zero inflation and dispersion parameter results, for the average time spent vigilant on camera under the explanatory variables of treatment and environment. Random effects were survey session (1-4), survey night (1-6), and station number (1-24 per environment). Surveys were conducted across an urban disturbance gradient between January and September of 2019. Estimates given are on the log scale. Significant results are bold.

| Conditional model (estimate on log scale):         |              |             |               |                 |
|----------------------------------------------------|--------------|-------------|---------------|-----------------|
|                                                    | Estimate     | Std. Error  | z value       | Pr(> z )        |
| <i>(Intercept: control, far, brown antechinus)</i> | <b>-3.35</b> | <b>0.12</b> | <b>-27.09</b> | <b>0.000000</b> |
| Treatment: cat                                     | 0.12         | 0.12        | 1.02          | 0.306461        |
| Treatment: cat with disturbance                    | -0.16        | 0.15        | -1.03         | 0.302271        |
| Treatment: disturbance                             | <b>-0.39</b> | <b>0.14</b> | <b>-2.72</b>  | <b>0.006553</b> |
| Treatment: fox                                     | -0.07        | 0.13        | -0.57         | 0.566572        |
| Treatment: fox with disturbance                    | <b>-0.40</b> | <b>0.15</b> | <b>-2.73</b>  | <b>0.006335</b> |
| Treatment: pre-treatment                           | <b>-0.34</b> | <b>0.11</b> | <b>-3.10</b>  | <b>0.001911</b> |
| Location: mid                                      | 0.02         | 0.16        | 0.10          | 0.923758        |
| Location: close                                    | -0.27        | 0.16        | -1.64         | 0.101079        |
| Species: northern brown bandicoot                  | <b>0.40</b>  | <b>0.10</b> | <b>3.92</b>   | <b>0.000088</b> |
| Species: bird                                      | -0.05        | 0.18        | -0.27         | 0.786941        |
| Species: common brushtail possum                   | <b>1.16</b>  | <b>0.11</b> | <b>10.68</b>  | <b>0.000000</b> |
| Species: brown and black rats                      | <b>0.72</b>  | <b>0.07</b> | <b>10.48</b>  | <b>0.000000</b> |
| Treatment: cat, Location: mid                      | -0.04        | 0.22        | -0.19         | 0.847798        |
| Treatment: cat with disturbance, Location: mid     | -0.23        | 0.30        | -0.78         | 0.432769        |
| Treatment: disturbance, Location: mid              | 0.23         | 0.25        | 0.91          | 0.364377        |
| Treatment: fox, Location: mid                      | 0.18         | 0.22        | 0.81          | 0.420011        |
| Treatment: fox with disturbance, Location: mid     | 0.10         | 0.26        | 0.38          | 0.701069        |

|                                                         |             |             |             |                 |
|---------------------------------------------------------|-------------|-------------|-------------|-----------------|
| Treatment: pre-treatment, Location: mid                 | -0.09       | 0.16        | -0.58       | 0.563744        |
| Treatment: cat, Location: close                         | -0.29       | 0.21        | -1.38       | 0.167121        |
| <b>Treatment: cat with disturbance, Location: close</b> | <b>0.76</b> | <b>0.23</b> | <b>3.30</b> | <b>0.000976</b> |
| <b>Treatment: disturbance, Location: close</b>          | <b>0.70</b> | <b>0.23</b> | <b>3.04</b> | <b>0.002368</b> |
| Treatment: fox, Location: close                         | -0.01       | 0.21        | -0.03       | 0.977015        |
| <b>Treatment: fox with disturbance, Location: close</b> | <b>0.55</b> | <b>0.24</b> | <b>2.32</b> | <b>0.020266</b> |
| Treatment: pre-treatment, Location: close               | 0.03        | 0.16        | 0.20        | 0.841394        |

**Zero-inflation model:**

|                                                    | Estimate     | Std. Error  | z value      | Pr(> z )        |
|----------------------------------------------------|--------------|-------------|--------------|-----------------|
| <i>(Intercept: control, far, brown antechinus)</i> | -1.19        | 0.31        | -3.88        | 0.000106        |
| Treatment: cat                                     | 0.02         | 0.37        | 0.05         | 0.963727        |
| Treatment: cat with disturbance                    | -0.52        | 0.75        | -0.70        | 0.483656        |
| Treatment: disturbance                             | -20.54       | 8211.65     | 0.00         | 0.998004        |
| Treatment: fox                                     | -0.34        | 0.39        | -0.88        | 0.378487        |
| Treatment: fox with disturbance                    | -2.52        | 2.14        | -1.17        | 0.240629        |
| <b>Treatment: pre-treatment</b>                    | <b>-1.33</b> | <b>0.48</b> | <b>-2.74</b> | <b>0.006107</b> |
| Location: mid                                      | 0.70         | 0.51        | 1.38         | 0.168118        |
| <b>Location: close</b>                             | <b>-1.23</b> | <b>0.58</b> | <b>-2.13</b> | <b>0.033004</b> |
| Species: northern brown bandicoot                  | 0.56         | 0.77        | 0.73         | 0.466487        |
| Species: bird                                      | 0.73         | 0.85        | 0.86         | 0.388283        |
| Species: common brushtail possum                   | 0.63         | 0.70        | 0.89         | 0.371397        |
| Species: brown and black rats                      | -17.53       | 933.54      | -0.02        | 0.985017        |

**Dispersion model:**

|                                                               | Estimate     | Std. Error  | z value       | Pr(> z )        |
|---------------------------------------------------------------|--------------|-------------|---------------|-----------------|
| <i>(Intercept: session 1, control, far, brown antechinus)</i> | <b>3.60</b>  | <b>0.20</b> | <b>17.72</b>  | <b>0.000000</b> |
| <b>Session 2</b>                                              | <b>-0.41</b> | <b>0.12</b> | <b>-3.36</b>  | <b>0.000784</b> |
| <b>Session 3</b>                                              | <b>-0.38</b> | <b>0.12</b> | <b>-3.15</b>  | <b>0.001629</b> |
| <b>Session 4</b>                                              | <b>-0.71</b> | <b>0.11</b> | <b>-6.21</b>  | <b>0.000000</b> |
| Treatment: cat                                                | -0.38        | 0.21        | -1.80         | 0.071961        |
| <b>Treatment: cat with disturbance</b>                        | <b>-0.92</b> | <b>0.23</b> | <b>-4.09</b>  | <b>0.000043</b> |
| <b>Treatment: disturbance</b>                                 | <b>-0.78</b> | <b>0.21</b> | <b>-3.76</b>  | <b>0.000170</b> |
| <b>Treatment: fox</b>                                         | <b>-0.50</b> | <b>0.21</b> | <b>-2.41</b>  | <b>0.015843</b> |
| <b>Treatment: fox with disturbance</b>                        | <b>-0.84</b> | <b>0.21</b> | <b>-3.93</b>  | <b>0.000084</b> |
| Treatment: pre-treatment                                      | -0.27        | 0.17        | -1.57         | 0.117222        |
| <b>Location: mid</b>                                          | <b>-0.64</b> | <b>0.13</b> | <b>-4.86</b>  | <b>0.000001</b> |
| <b>Location: close</b>                                        | <b>-0.24</b> | <b>0.12</b> | <b>-2.10</b>  | <b>0.035442</b> |
| Species: northern brown bandicoot                             | 0.06         | 0.17        | 0.33          | 0.742610        |
| <b>Species: bird</b>                                          | <b>-1.95</b> | <b>0.18</b> | <b>-10.88</b> | <b>0.000000</b> |
| <b>Species: common brushtail possum</b>                       | <b>-1.16</b> | <b>0.17</b> | <b>-6.73</b>  | <b>0.000000</b> |
| Species: brown and black rats                                 | 0.09         | 0.14        | 0.67          | 0.502382        |

**Supplementary Table 6:** Overlap coefficient for the hours active at giving-up density stations (baited with live mealworms) for each frequently observed small mammal species (brown antechinus, northern brown bandicoot, brown and black rats combined, and common brushtail possum) along the three urban disturbance gradient environments (close, mid, far), under the different treatment conditions compared to the procedural control (pre-treatment: three nights of trials under natural conditions before the treatment trials, disturbance: human disturbance cues of continual sound and light, cat: domestic cat cues of cat integumentary scent captured on towels placed in their bedding, cat and disturbance: the combination of these stressors, fox: red fox cues of fox integumentary scent captured on towels placed in their bedding, fox and disturbance: the combination of these stressors). Results in bold are those notably lower in overlap for hours active.

| Overlap Coefficient with control treatment conditions |                        |       |             |      |
|-------------------------------------------------------|------------------------|-------|-------------|------|
| Species                                               | Treatment              | close | mid         | far  |
| antechinus                                            | pre-treatment          | 0.8   | 0.81        | 0.89 |
| antechinus                                            | disturbance            | 0.72  | 0.83        | 0.9  |
| antechinus                                            | cat                    | 0.86  | 0.9         | 0.92 |
| antechinus                                            | cat disturbance        | 0.85  | 0.86        | 0.9  |
| antechinus                                            | fox                    | 0.91  | 0.91        | 0.95 |
| <b>antechinus</b>                                     | <b>fox disturbance</b> | 0.85  | <b>0.68</b> | 0.87 |
| <b>bandicoot</b>                                      | <b>pre-treatment</b>   | 0.76  | <b>0.36</b> | na   |
| bandicoot                                             | disturbance            | 0.91  | 0.72        | na   |
| <b>bandicoot</b>                                      | <b>cat</b>             | 0.82  | <b>0.68</b> | na   |
| <b>bandicoot</b>                                      | <b>cat disturbance</b> | 0.92  | <b>0.55</b> | na   |
| <b>bandicoot</b>                                      | <b>fox</b>             | 0.9   | <b>0.66</b> | na   |
| bandicoot                                             | fox disturbance        | 0.87  | 0.82        | na   |
| rat                                                   | pre-treatment          | 0.92  | 0.81        | 0.86 |
| rat                                                   | disturbance            | 0.92  | 0.77        | 0.85 |
| rat                                                   | cat                    | 0.76  | 0.84        | 0.91 |
| rat                                                   | cat disturbance        | 0.92  | 0.83        | 0.89 |
| rat                                                   | fox                    | 0.86  | 0.85        | 0.86 |
| rat                                                   | fox disturbance        | 0.88  | 0.79        | 0.85 |
| <b>brushtail</b>                                      | <b>pre-treatment</b>   | na    | <b>0.66</b> | 0.86 |
| brushtail                                             | disturbance            | na    | 0.81        | 0.84 |
| <b>brushtail</b>                                      | <b>cat</b>             | na    | <b>0.62</b> | 0.78 |
| brushtail                                             | cat disturbance        | na    | 0.73        | 0.74 |
| <b>brushtail</b>                                      | <b>fox</b>             | na    | <b>0.6</b>  | 0.82 |
| <b>brushtail</b>                                      | <b>fox disturbance</b> | na    | <b>0.55</b> | 0.7  |

**Supplementary Table 7:** Overlap coefficients for the hours active between the observed species (brown antechinus, northern brown bandicoot, birds, common brushtail possum, domestic cat, pet dogs, short-beaked echidna, red fox, lace monitor, pet horse, person, brown and black rats combined, common ringtail possum) along the three urban disturbance gradient environments (close, mid, far), under the combined treatment conditions, at both giving-up density stations and baited predator cameras. Results in bold are the lowest overlap in hours active for each pairing of species.

| Overlap Coefficient for species groups per location |           |       |              |      |
|-----------------------------------------------------|-----------|-------|--------------|------|
| SppGroup1                                           | SppGroup2 | Close | Mid          | Far  |
| antechinus                                          | fox       | 0.4   | <b>0.18</b>  | 0.55 |
| bandicoot                                           | fox       | 0.46  | <b>0.2</b>   | 0.49 |
| intro rat                                           | fox       | 0.57  | <b>0.22</b>  | 0.5  |
| brushtail                                           | fox       | 0.53  | <b>0.22</b>  | 0.53 |
| ringtail                                            | fox       | 0.31  | Nil          | 0.71 |
| echidna                                             | fox       | Nil   | <b>0.08</b>  | 0.12 |
| bird                                                | fox       | 0.52  | <b>0.009</b> | 0.03 |

|            |              |             |               |               |
|------------|--------------|-------------|---------------|---------------|
| antechinus | dog          | 0.25        | 0.08          | <b>0.008</b>  |
| bandicoot  | dog          | 0.16        | 0.04          | <b>1E-11</b>  |
| intro rat  | dog          | 0.08        | 0.05          | <b>3E-06</b>  |
| brushtail  | dog          | 0.1         | 0.04          | <b>3E-06</b>  |
| ringtail   | dog          | 0.0009      | Nil           | <b>9E-07</b>  |
| echidna    | dog          | Nil         | <b>0.002</b>  | 0.02          |
| bird       | dog          | 0.77        | 0.23          | <b>0.22</b>   |
| antechinus | cat          | 0.47        | Nil           | Nil           |
| bandicoot  | cat          | 0.4         | Nil           | Nil           |
| intro rat  | cat          | 0.49        | Nil           | Nil           |
| brushtail  | cat          | 0.39        | Nil           | Nil           |
| ringtail   | cat          | 0.42        | Nil           | Nil           |
| echidna    | cat          | Nil         | Nil           | Nil           |
| bird       | cat          | 0.36        | Nil           | Nil           |
| antechinus | lace monitor | Nil         | <b>0.04</b>   | 0.05          |
| bandicoot  | lace monitor | Nil         | 0.03          | <b>9E-13</b>  |
| intro rat  | lace monitor | Nil         | 0.02          | <b>0.001</b>  |
| brushtail  | lace monitor | Nil         | 0.02          | <b>0.001</b>  |
| ringtail   | lace monitor | Nil         | Nil           | <b>5E-08</b>  |
| echidna    | lace monitor | Nil         | <b>0.0001</b> | 0.31          |
| bird       | lace monitor | Nil         | 0.58          | <b>0.41</b>   |
| antechinus | person       | 0.21        | 0.07          | <b>0.02</b>   |
| bandicoot  | person       | 0.14        | 0.03          | <b>7E-09</b>  |
| intro rat  | person       | 0.09        | 0.03          | <b>0.0004</b> |
| brushtail  | person       | 0.09        | 0.03          | <b>0.0004</b> |
| ringtail   | person       | 0.005       | Nil           | <b>3E-05</b>  |
| echidna    | person       | Nil         | <b>0.004</b>  | 0.06          |
| bird       | person       | 0.77        | 0.5           | 0.14          |
| bandicoot  | antechinus   | 0.77        | 0.75          | <b>0.26</b>   |
| intro rat  | antechinus   | 0.75        | 0.81          | <b>0.74</b>   |
| brushtail  | antechinus   | 0.71        | 0.73          | <b>0.71</b>   |
| ringtail   | antechinus   | <b>0.37</b> | Nil           | 0.42          |
| echidna    | antechinus   | Nil         | 0.59          | <b>0.46</b>   |
| bird       | antechinus   | 0.35        | <b>0.15</b>   | 0.31          |
| intro rat  | bandicoot    | 0.78        | 0.8           | <b>0.23</b>   |
| brushtail  | bandicoot    | 0.81        | 0.82          | <b>0.29</b>   |
| ringtail   | bandicoot    | <b>0.33</b> | Nil           | 0.72          |
| echidna    | bandicoot    | Nil         | 0.7           | 0.01          |
| bird       | bandicoot    | 0.25        | 0.07          | <b>4E-05</b>  |
| brushtail  | rat          | 0.73        | 0.88          | 0.84          |
| ringtail   | rat          | 0.44        | Nil           | 0.4           |
| echidna    | rat          | Nil         | 0.65          | 0.51          |
| bird       | rat          | 0.17        | <b>0.07</b>   | 0.13          |
| ringtail   | brushtail    | 0.32        | Nil           | 0.48          |
| echidna    | brushtail    | Nil         | 0.7           | <b>0.46</b>   |
| bird       | brushtail    | 0.2         | <b>0.05</b>   | 0.12          |

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