**Supplemental Information for:**

**Metabarcoding of trap nests reveals differential impact of urbanization on**

**cavity nesting bee and wasp communities**

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Table S1: Locations of trap nests (n=18) across five German cities, along with geographic coordinates, percentage of urban area within a 500-metre buffer and distance from city centre (main railway station). Grey markings indicate locations where sequencing of samples provided insufficient data for further statistical analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Location name | City | % Urban | % Not Urban | Distance to city centre [m] | Coordinates |
| 13587\_Am HeGe | Berlin | 60 | 40 | 12400 | 52.56538, 13.19841 |
| 21031\_HeiGrGr | Hamburg | 68 | 32 | 11500 | 53.51627, 10.16840 |
| 21107\_FähGTGr | Hamburg | 99 | 1 | 4500 | 53.51585, 9.98110 |
| 21244\_Am GrGr | Hamburg | 11 | 89 | 26200 | 53.33792, 9.84718 |
| 50226\_RotGyGy | Cologne | 68 | 32 | 11000 | 50.91864, 6.80684 |
| 50679\_AltFöFö | Cologne | 65 | 35 | 2300 | 50.92690, 6.98050 |
| 50735\_NesGGGr | Cologne | 100 | 0 | 4000 | 50.97738, 6.96460 |
| 50931\_HerBiUn | Cologne | 79 | 21 | 2700 | 50.93492, 6.92005 |
| 51069\_DelReGr | Cologne | 92 | 8 | 9000 | 50.97336, 7.07632 |
| 60314\_OstUhGr | Frankfurt | 97 | 3 | 2400 | 50.11163, 8.69766 |
| 60388\_BarScGe | Frankfurt | 49 | 51 | 8400 | 50.14819, 8.76412 |
| 60433\_JosZiGy | Frankfurt | 90 | 10 | 5500 | 50.15737, 8.65850 |
| 60488\_KolLiGy | Frankfurt | 91 | 9 | 4900 | 50.13341, 8.60964 |
| 61118\_SaaSaGr | Frankfurt | 80 | 20 | 9900 | 50.18457, 8.73502 |
| 61462\_BisBiGy | Frankfurt | 80 | 20 | 15600 | 50.17575, 8.47273 |
| 63457\_In PaGy | Frankfurt | 65 | 35 | 20700 | 50.11325, 8.95401 |
| 63571\_RatHeGr | Frankfurt | 46 | 54 | 36700 | 50.20575, 9.15544 |
| 65929\_SosWaGe | Frankfurt | 62 | 38 | 8600 | 50.11332, 8.54430 |

Table S2: Summary of sequencing success for arthropod prey and plant DNA, extracted from Hymenoptera trap nest samples from 18 locations. Grey markings indicate locations, where sequences could not be identified and/or consisted only of wasp consumer DNA.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Location | City | Number of sequenced Samples | Samples with identified arthropod prey sequences | Sample with identified plant sequences | Sum of samples with identified sequences |
| 13587\_Am HeGe | Berlin | 13 | 6 | 2 | 8 |
| 21031\_HeiGrGr | Hamburg | 7 | 4 | 0 | 4 |
| 21107\_FähGTGr | Hamburg | 2 | 0 | 0 | 0 |
| 21244\_Am GrGr | Hamburg | 17 | 0 | 0 | 0 |
| 50226\_RotGyGy | Cologne | 16 | 1 | 2 | 3 |
| 50679\_AltFöFö | Cologne | 16 | 10 | 0 | 10 |
| 50735\_NesGGGr | Cologne | 25 | 5 | 1 | 6 |
| 50931\_HerBiUn | Cologne | 22 | 9 | 2 | 11 |
| 51069\_DelReGr | Cologne | 39 | 21 | 2 | 23 |
| 60314\_OstUhGr | Frankfurt | 3 | 0 | 1 | 1 |
| 60388\_BarScGe | Frankfurt | 20 | 2 | 0 | 2 |
| 60433\_JosZiGy | Frankfurt | 15 | 0 | 0 | 0 |
| 60488\_KolLiGy | Frankfurt | 11 | 1 | 2 | 3 |
| 61118\_SaaSaGr | Frankfurt | 14 | 0 | 0 | 0 |
| 61462\_BisBiGy | Frankfurt | 54 | 3 | 7 | 10 |
| 63457\_In PaGy | Frankfurt | 24 | 9 | 4 | 13 |
| 63571\_RatHeGr | Frankfurt | 17 | 10 | 0 | 10 |
| 65929\_SosWaGe | Frankfurt | 3 | 1 | 0 | 1 |