

SUPPLEMENTARY FILE 1

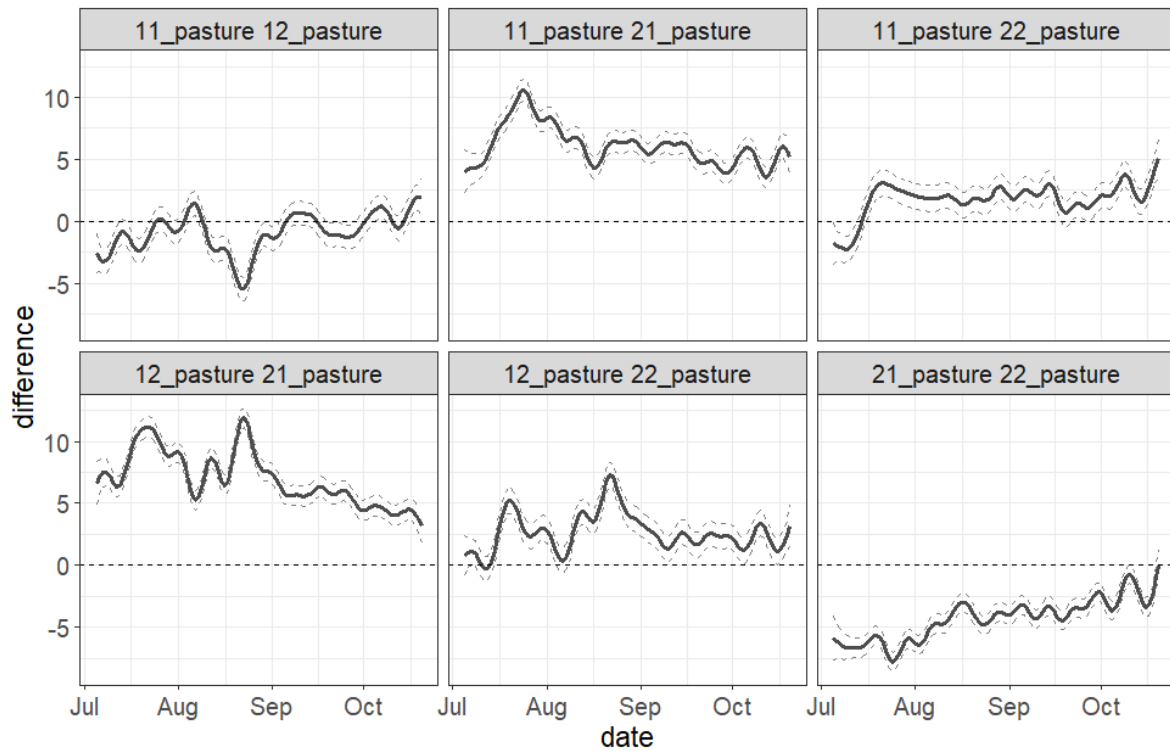


Figure S1. Pairwise differences of temperature in the pasture habitat among the four investigated sites. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

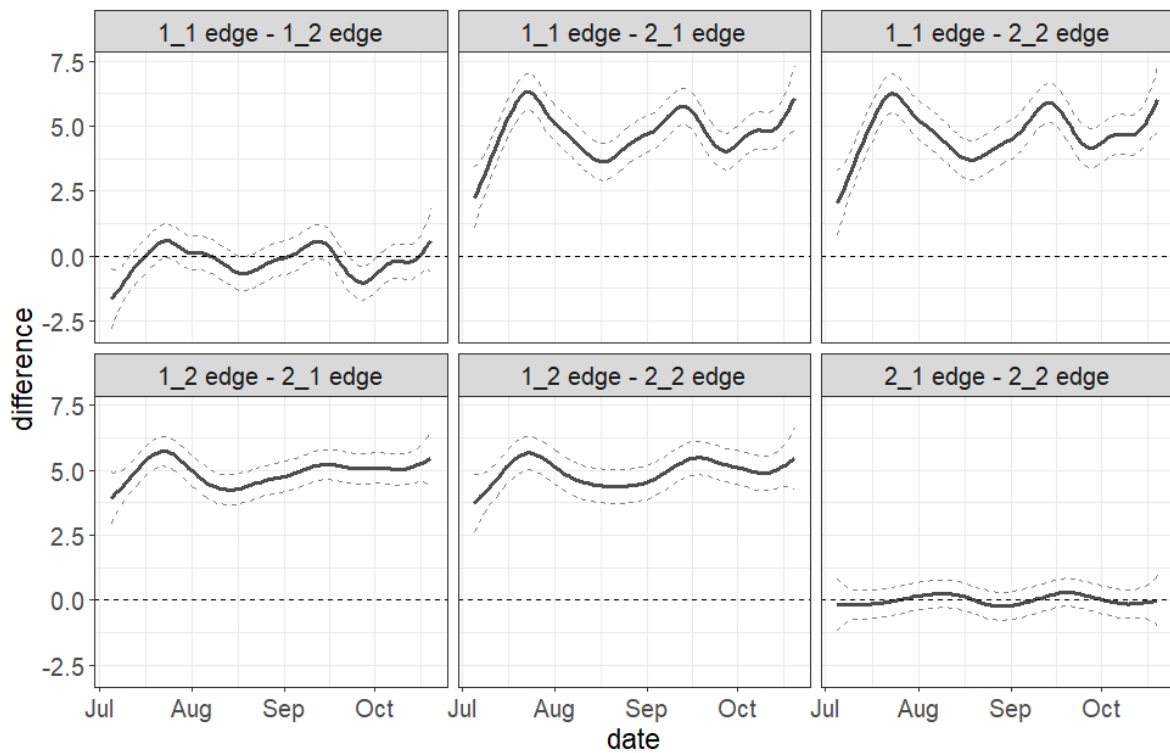


Figure S2. Pairwise differences of temperature in the edge habitat among the four investigated sites. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

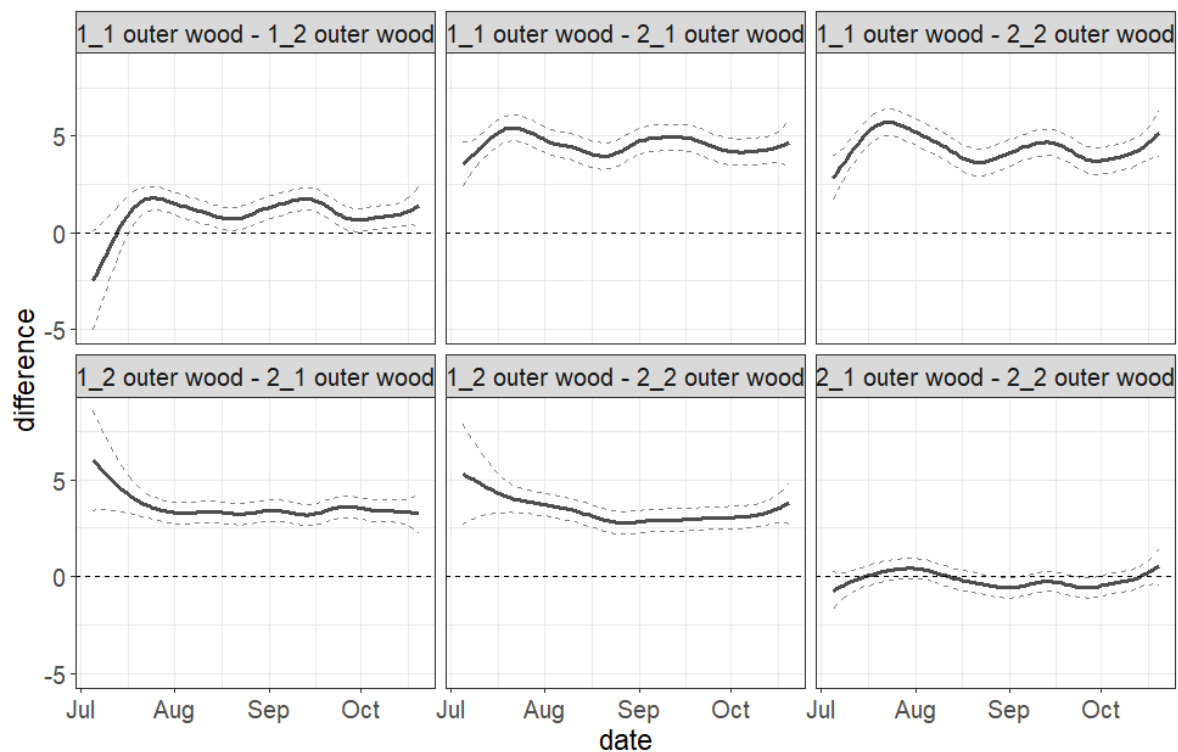


Figure S3. Pairwise differences of temperature in the outer wood habitat among the four investigated sites. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

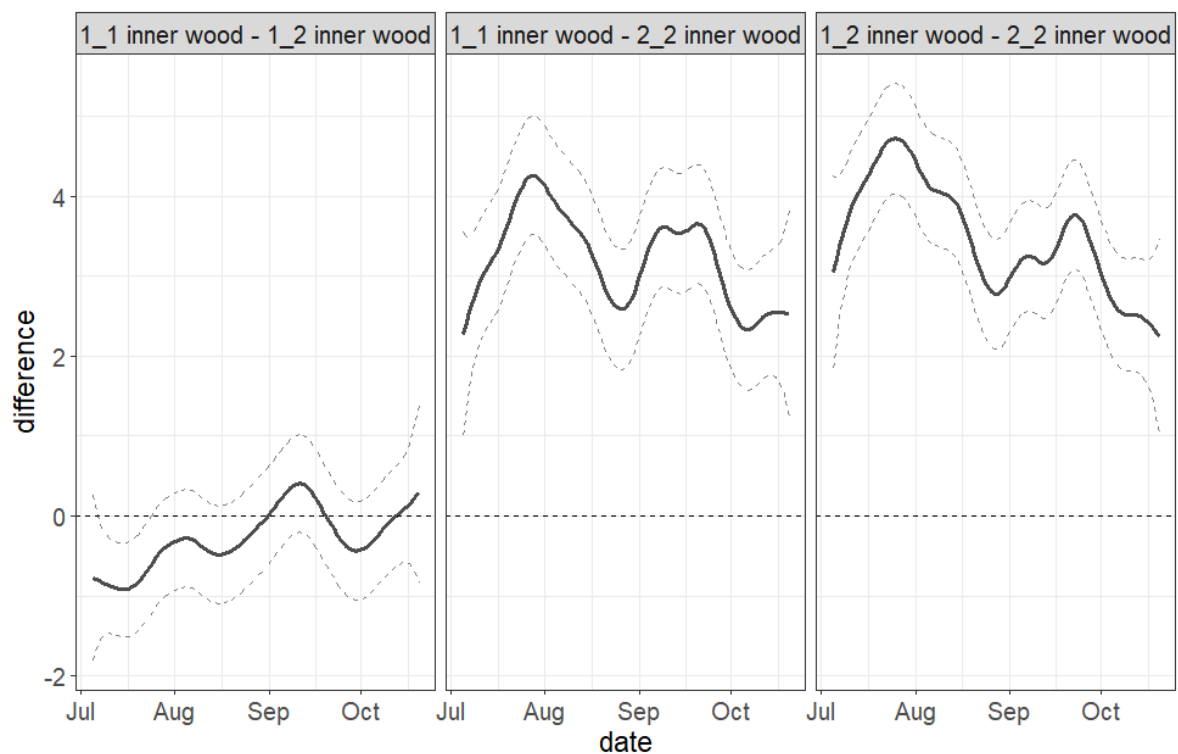


Figure S4. Pairwise differences of temperature in the inner wood habitat among the four investigated sites. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown. The data logger of site 21 was not working.

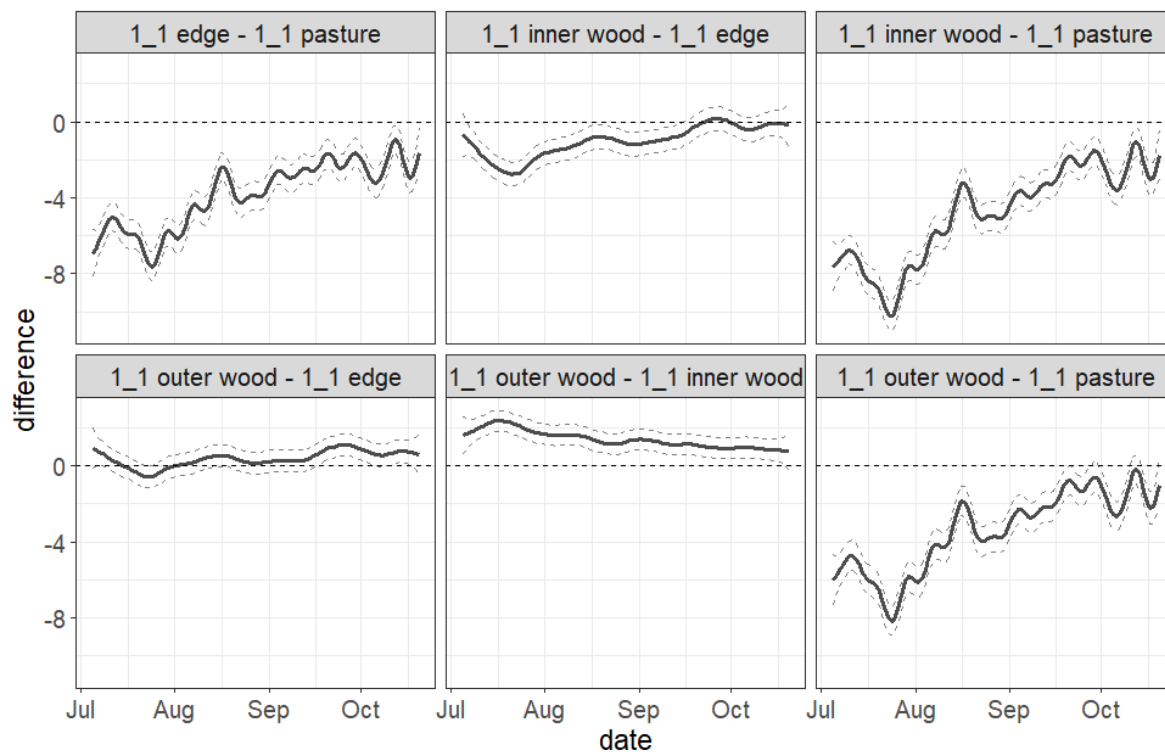


Figure S5. Pairwise differences of temperature in different habitats of site 1_1. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

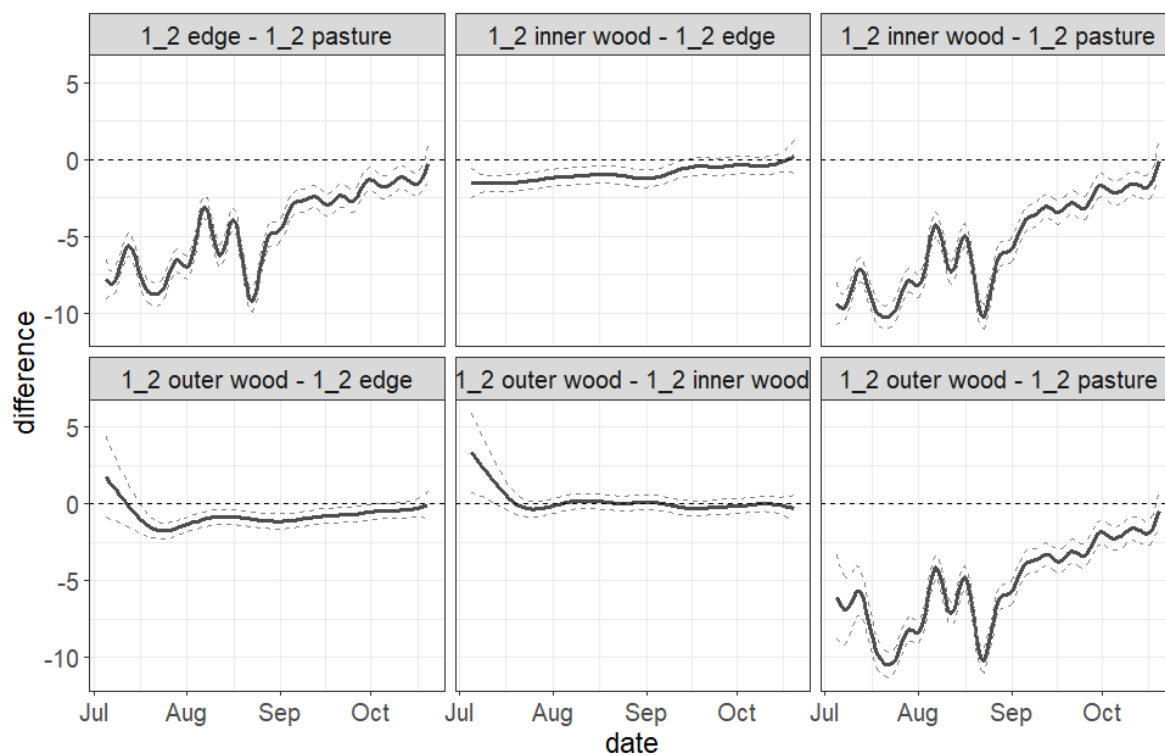


Figure S6. Pairwise differences of temperature in different habitats of site 1_2. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

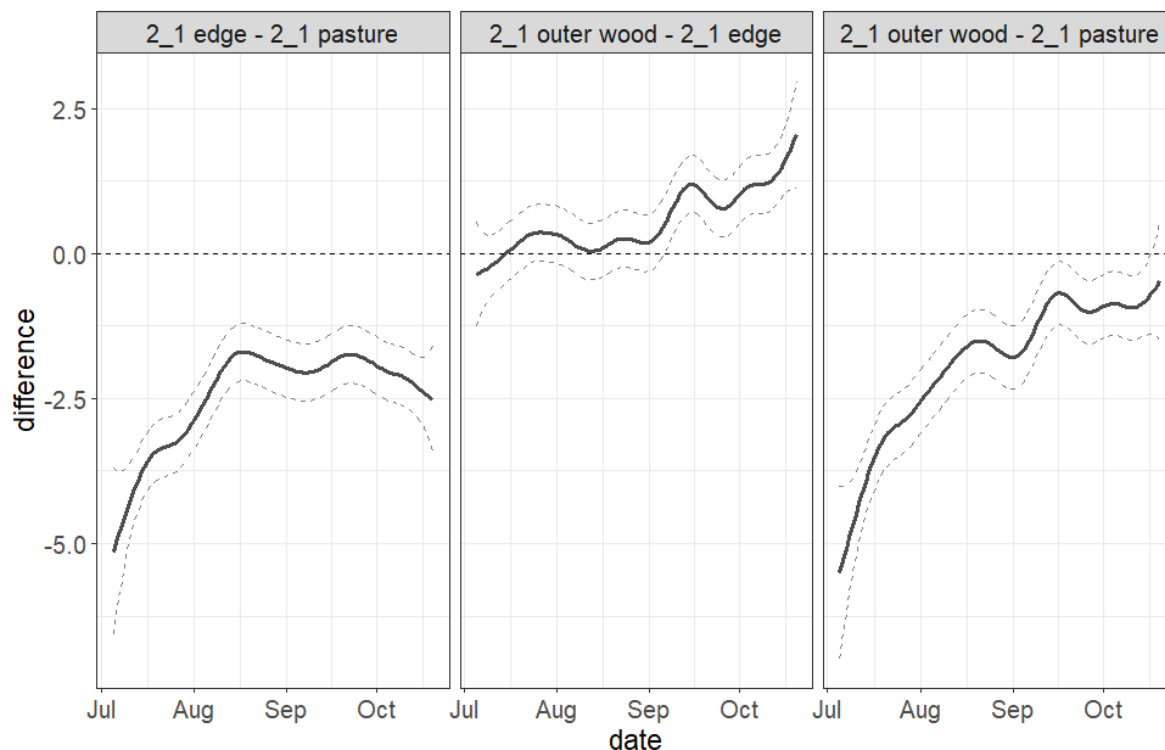


Figure S7. Pairwise differences of temperature in different habitats of site 2_1. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown. The data logger of the inner wood habitat was not working.

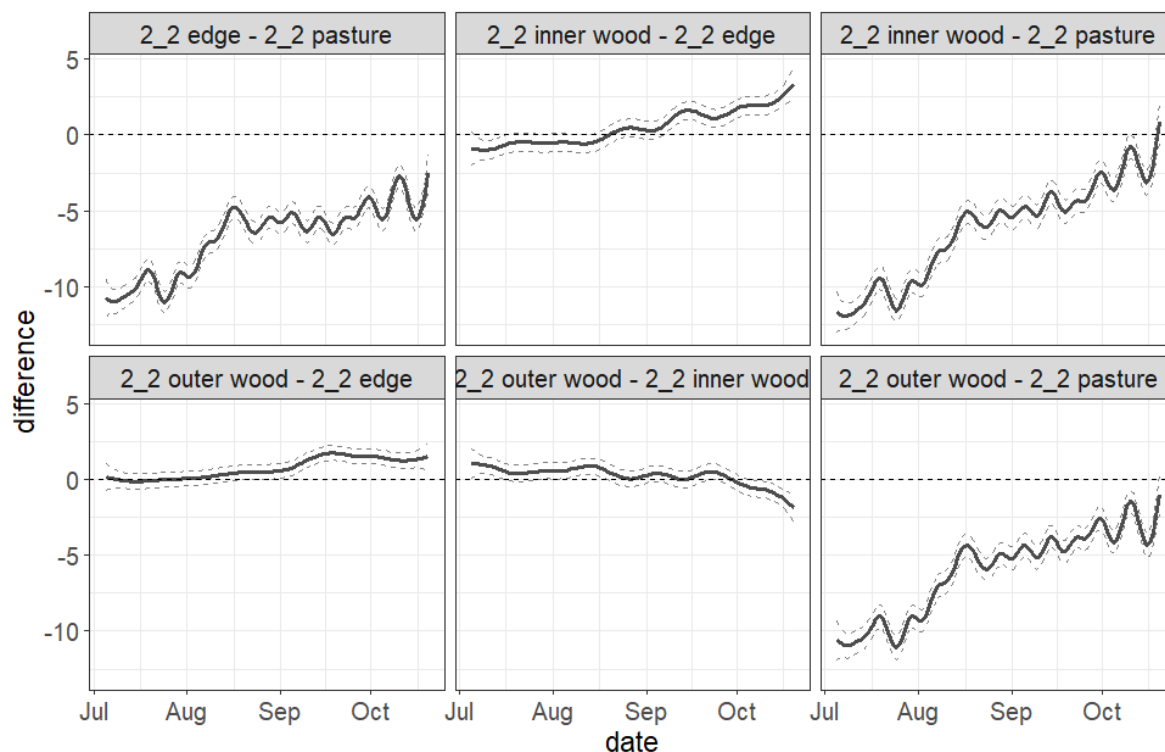


Figure S8. Pairwise differences of temperature in different habitats of site 2_2. Mean (black continuous line) and confidence intervals (grey dashed lines) are shown.

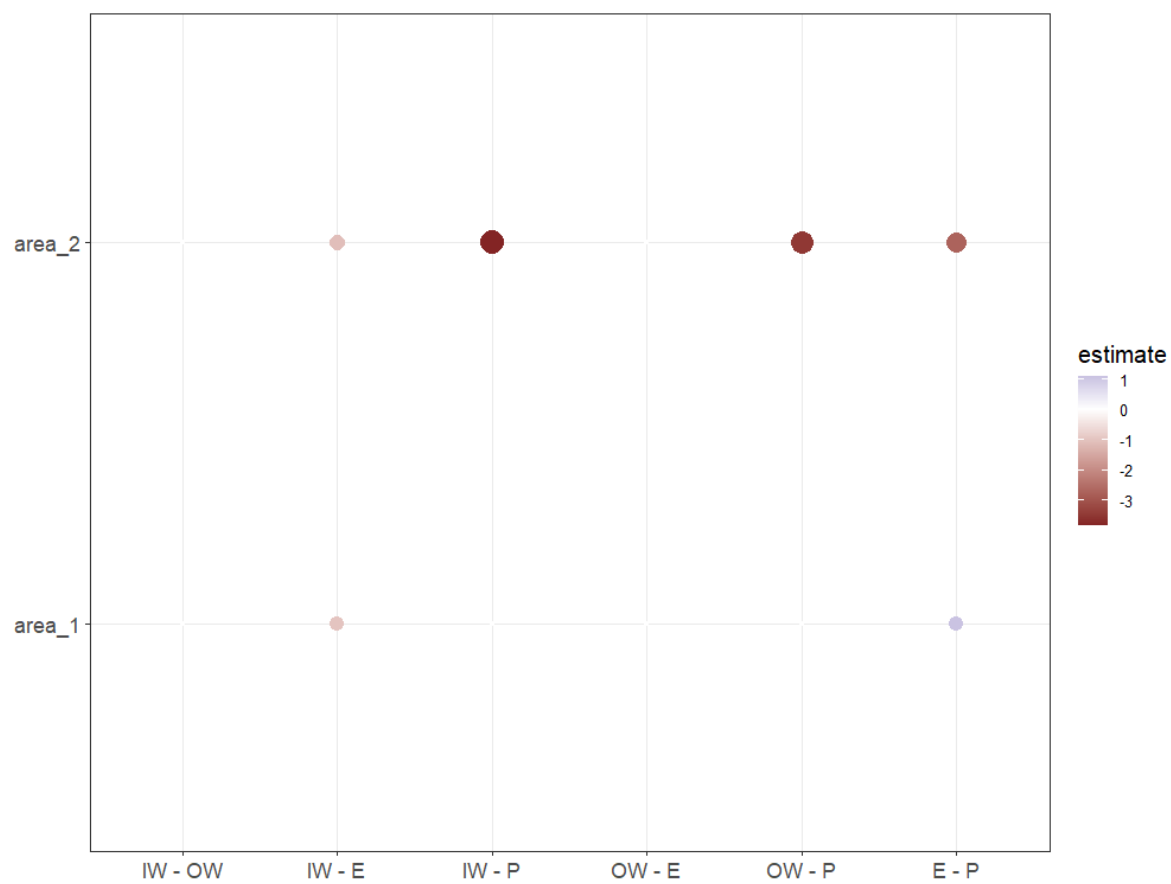


Figure S9. Pairwise comparison of species number between habitats within areas.

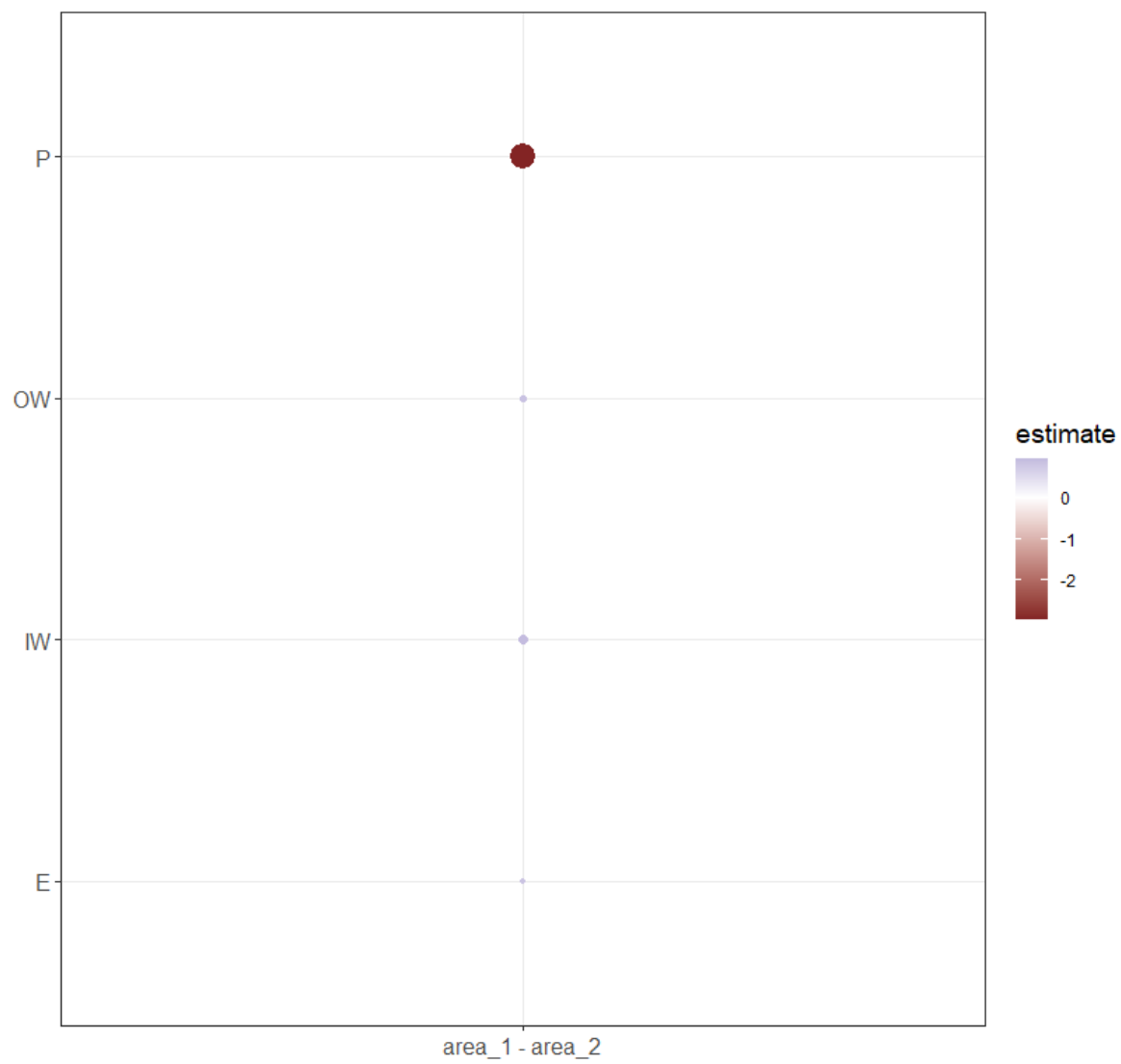


Figure S10. Pairwise comparison of species number between areas within habitat.

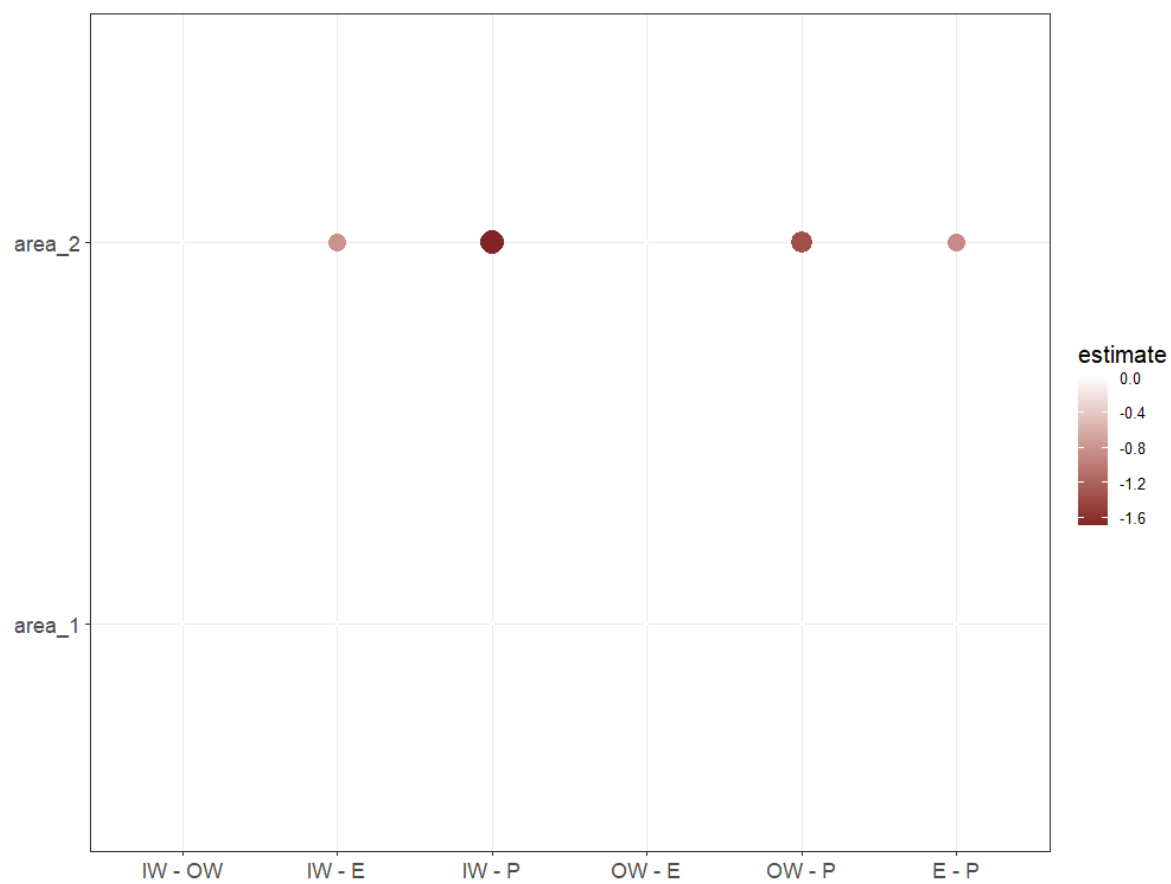


Figure S11. Pairwise comparison of abundance between habitats within areas.

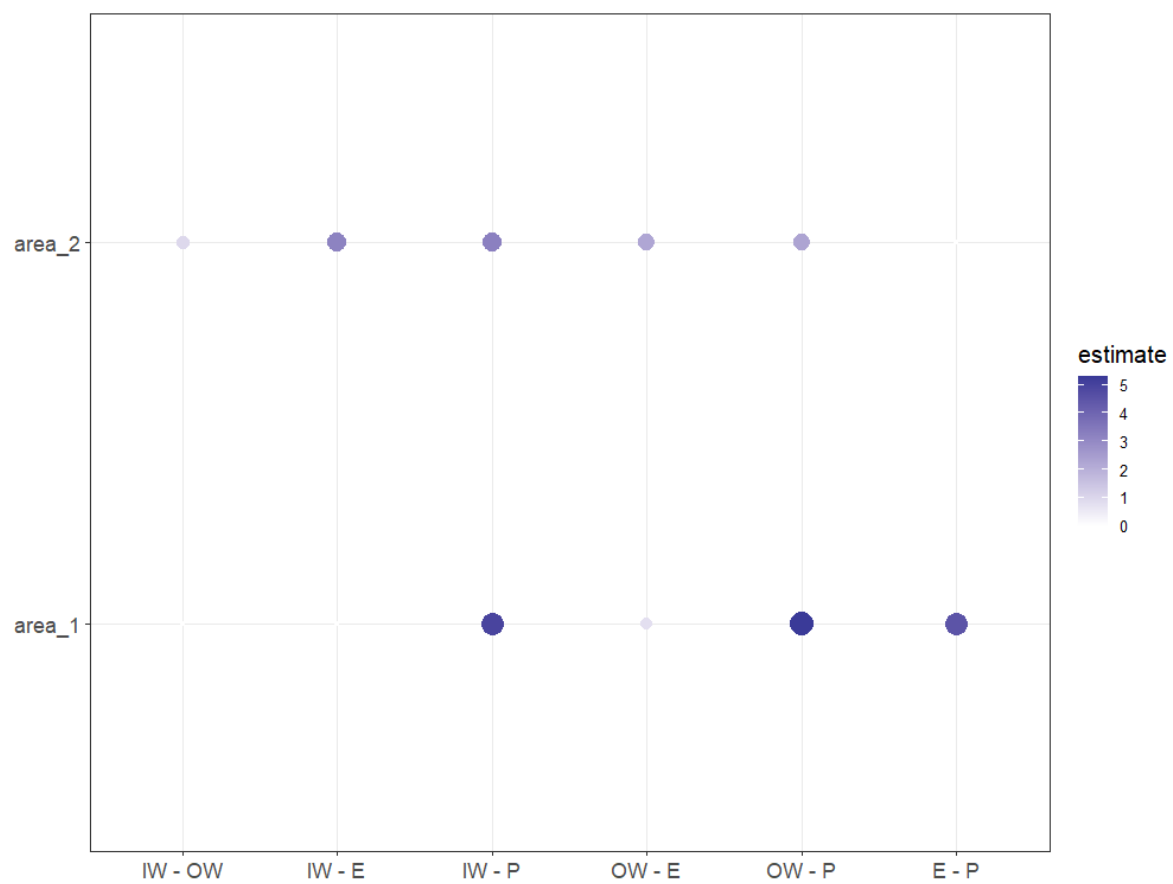


Figure S12. Pairwise comparison of dwellers percentage between habitats within areas.

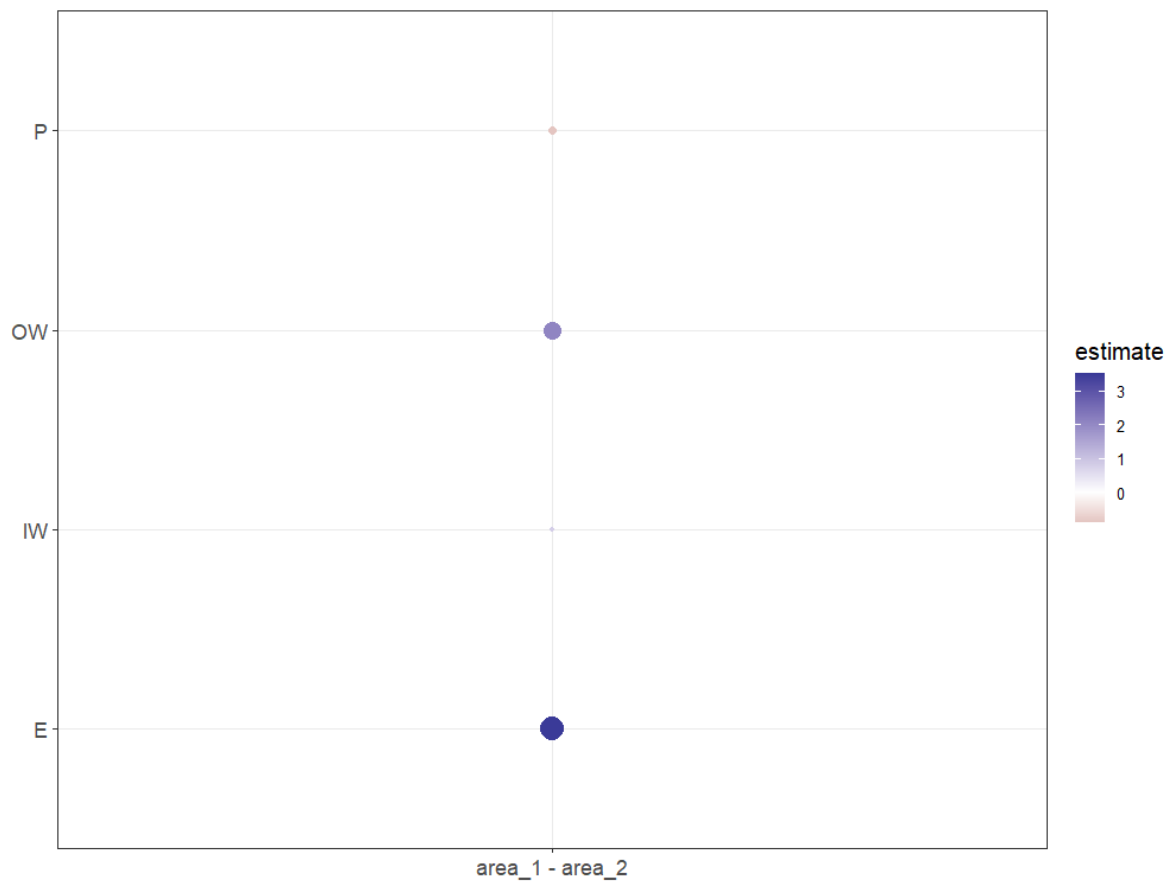


Figure S13. Pairwise comparison of dwellers percentage between areas within habitat.

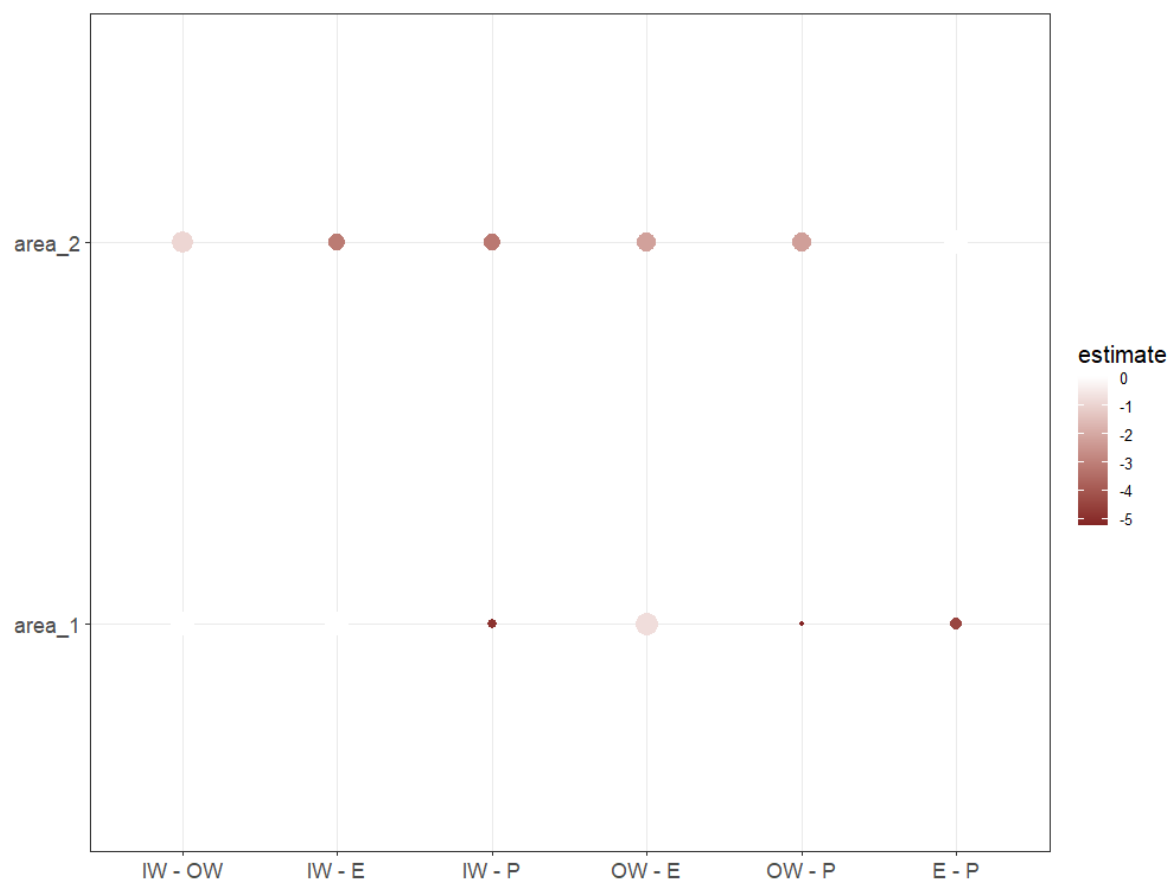


Figure S14. Pairwise comparison of tunnelers percentage between habitats within areas.

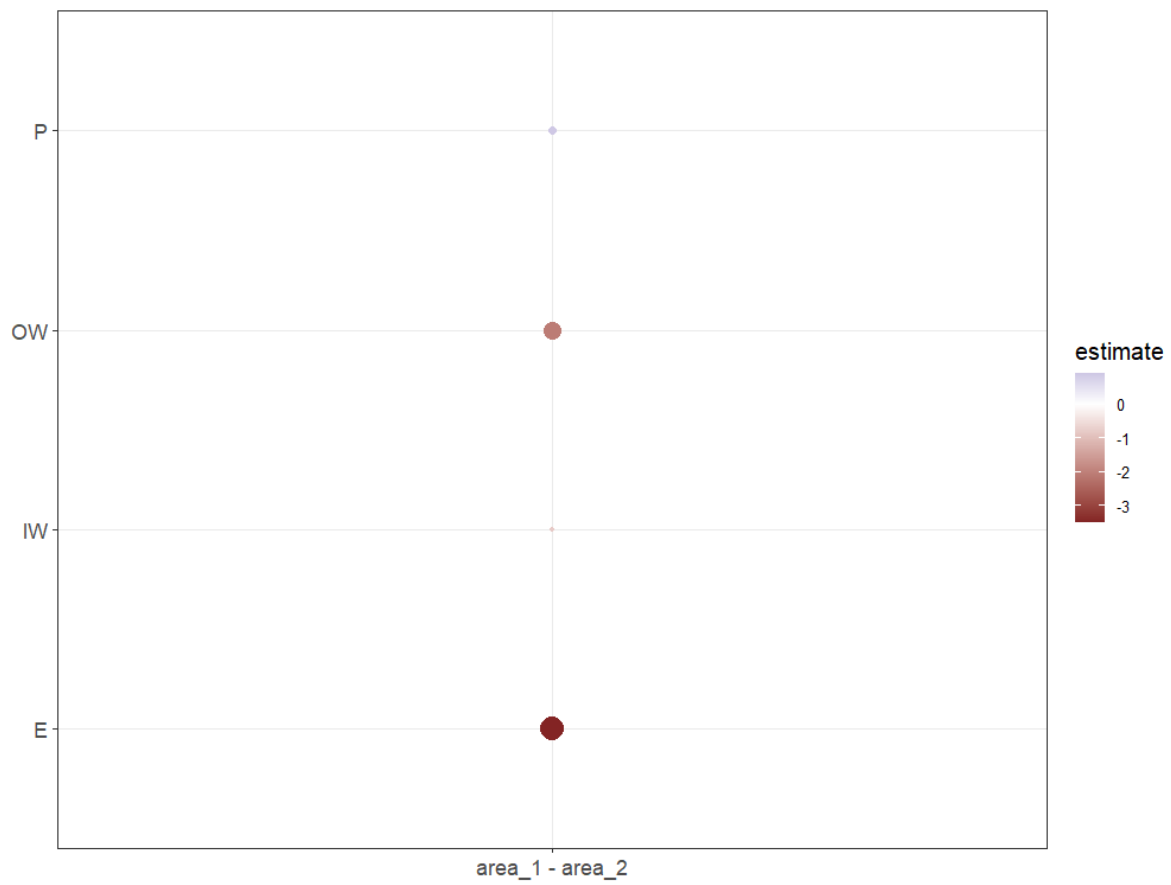


Figure S15. Pairwise comparison of tunnellers percentage between areas within habitat.

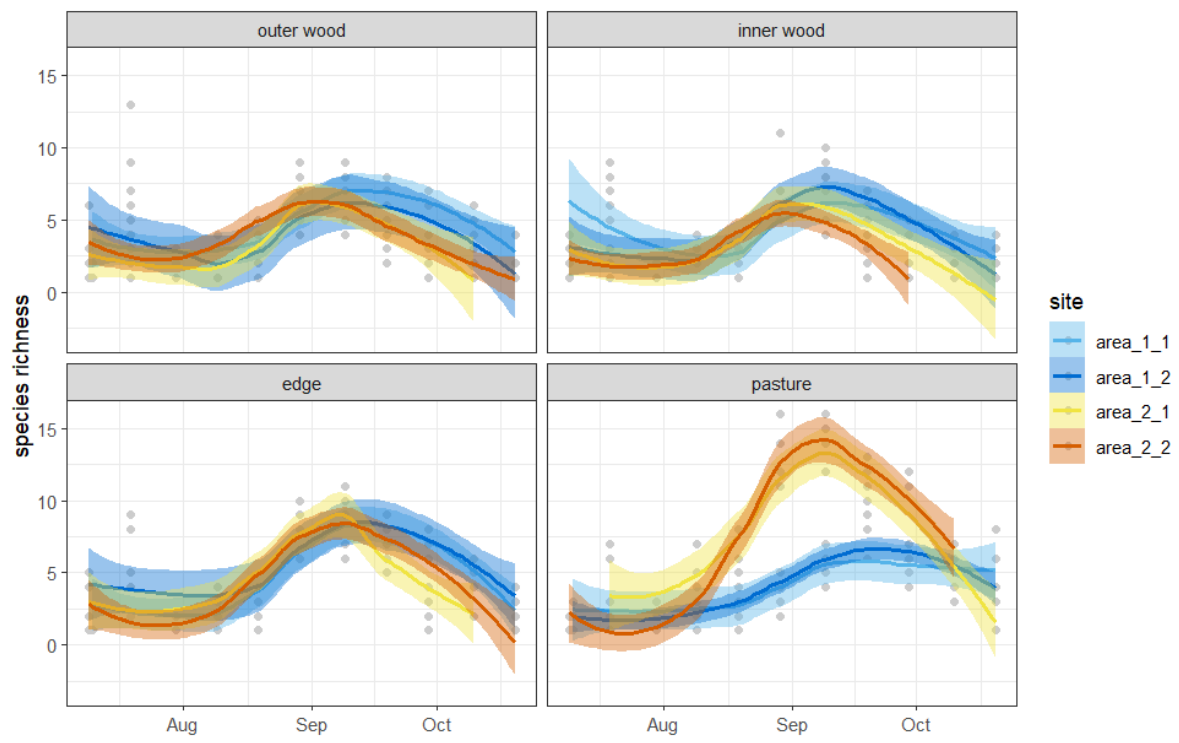


Figure S16. Temporal richness of species richness in the four study sites.

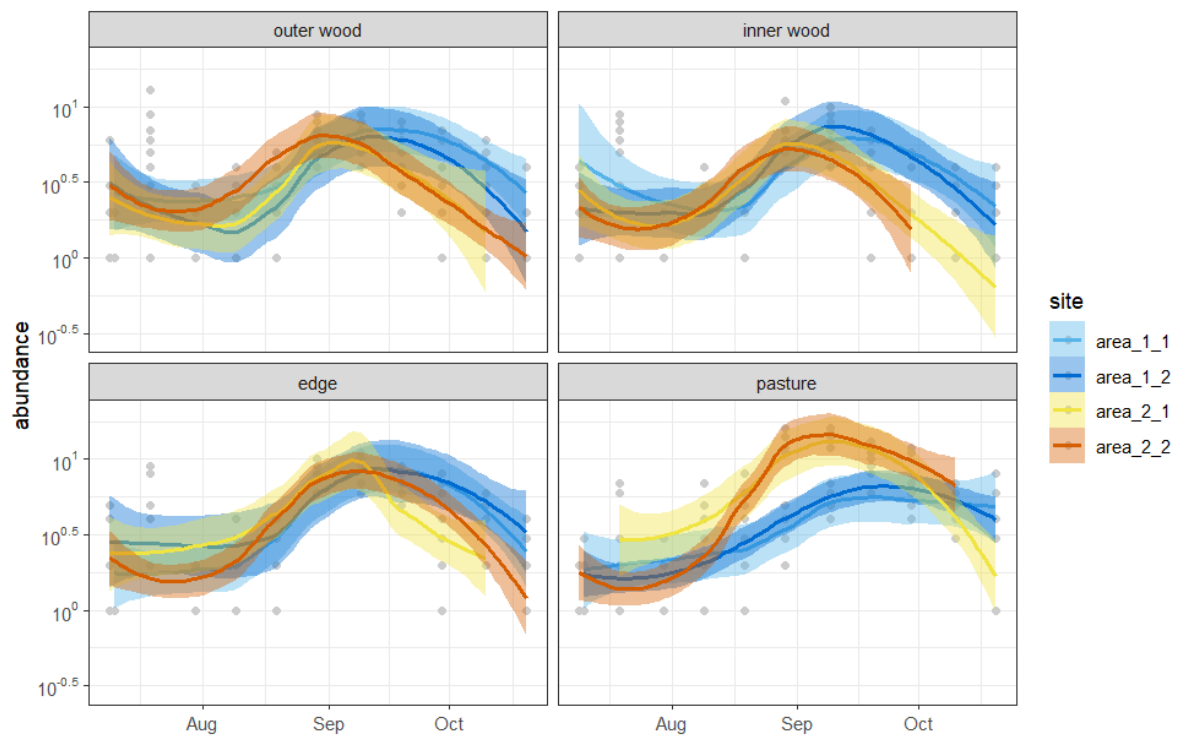


Figure S17. Temporal richness of abundance in the four study sites.

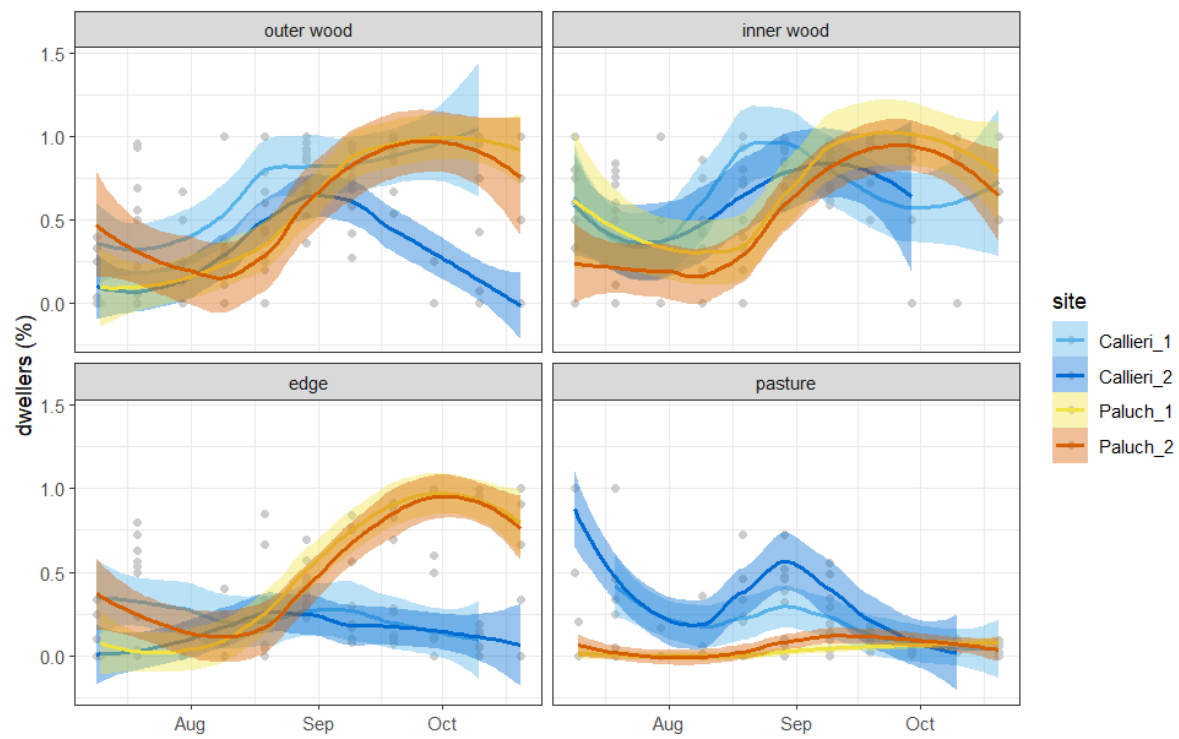


Figure S18. Temporal richness of dwellers' percentage in the four study sites.

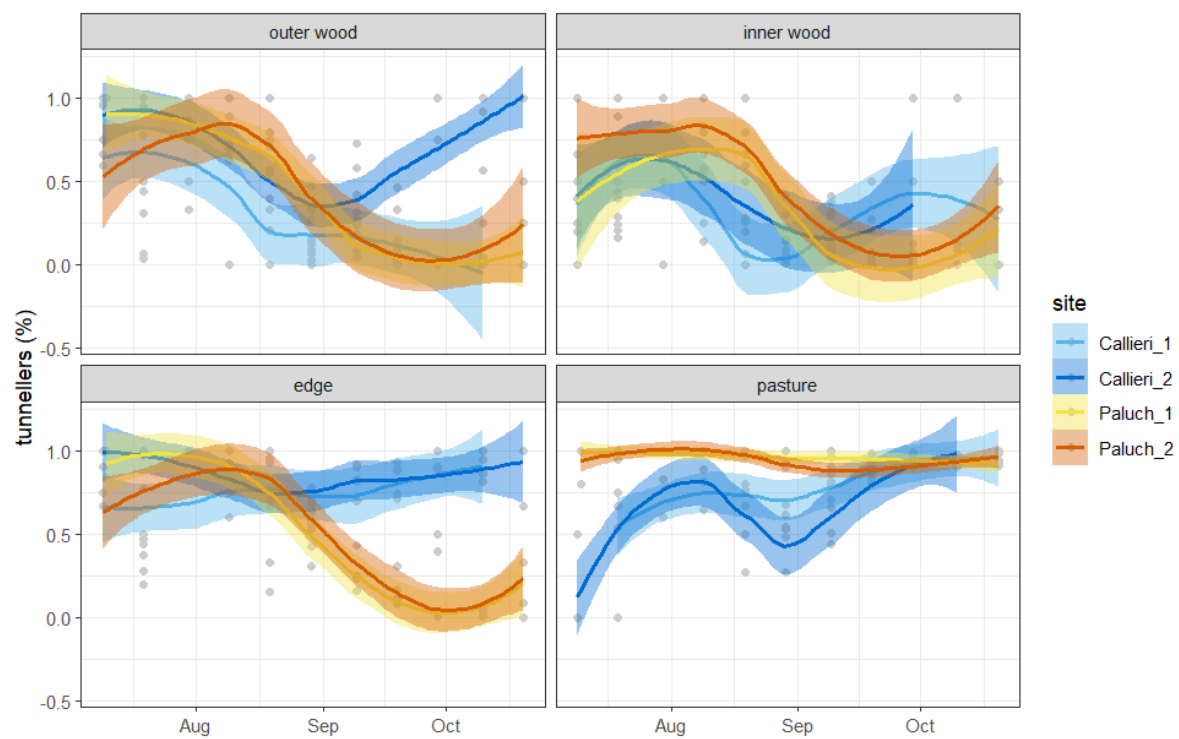


Figure S19. Temporal richness of tunnellers' percentage in the four study sites.

Table S1. Species abundances for each site and habitat.

| site | | area_1 | area_1 | area_1 | area_1 | area_2 | area_2 | area_2 | area_2 | |
|----------------------------------|------------------|------------|------------|--------|---------|------------|------------|--------|---------|-----------|
| habitat type | nesting strategy | inner wood | outer wood | edge | pasture | inner wood | outer wood | edge | pasture | row total |
| Acrossus depressus | dweller | 37 | 5 | 0 | 0 | 15 | 12 | 8 | 5 | 82 |
| Acrossus rufipes | dweller | 89 | 100 | 175 | 24 | 26 | 45 | 70 | 59 | 588 |
| Agoliinus satyrus | dweller | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 6 |
| Anoplotrupes stercorosus | tunneler | 407 | 220 | 51 | 5 | 157 | 693 | 1156 | 405 | 3094 |
| Aphodius fimetarius | dweller | 0 | 1 | 5 | 21 | 0 | 2 | 15 | 286 | 330 |
| Bodilopsis rufa | dweller | 89 | 52 | 110 | 44 | 49 | 28 | 73 | 147 | 592 |
| Calamosternus granarius | dweller | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 3 |
| Chilo thorax distinctus | dweller | 0 | 1 | 0 | 24 | 0 | 0 | 0 | 0 | 25 |
| Colobopterus erraticus | dweller | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 418 | 422 |
| Coprimorphus scrutator | dweller | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 13 |
| Esymus pusillus | dweller | 0 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 10 |
| Euheptelacus carinatus carinatus | dweller | 0 | 0 | 0 | 0 | 2 | 5 | 9 | 11 | 27 |
| Euoniticellus fulvus | tunneler | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 14 | 50 |
| Geotrupes spiniger | tunneler | 11 | 6 | 33 | 87 | 1 | 0 | 2 | 0 | 140 |
| Geotrupes stercorarius | tunneler | 0 | 7 | 8 | 4 | 15 | 2 | 61 | 128 | 225 |
| Labarrus lividus | dweller | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 3 |
| Limarus zenkeri | dweller | 427 | 214 | 162 | 1 | 276 | 299 | 74 | 18 | 1471 |
| Melinopterus prodromus | dweller | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 5 |
| Nialus varians | dweller | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| Nimbus contaminatus | dweller | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 |
| Onthophagus coenobita | tunneler | 3 | 8 | 10 | 38 | 0 | 0 | 0 | 0 | 59 |
| Onthophagus fracticornis | tunneler | 30 | 91 | 345 | 1921 | 6 | 36 | 954 | 6680 | 10063 |
| Onthophagus furcatus | tunneler | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Onthophagus joannae | tunneler | 0 | 0 | 3 | 15 | 0 | 0 | 1 | 416 | 435 |
| Onthophagus lemur | tunneler | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 |

| | | | | | | | | | | |
|--------------------------------|----------|------|------|------|------|-----|------|------|------|------------|
| Onthophagus medius | tunneler | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| Onthophagus taurus | tunneler | 6 | 13 | 45 | 522 | 0 | 0 | 1 | 34 | 621 |
| Onthophagus verticicornis | tunneler | 10 | 19 | 47 | 5 | 0 | 0 | 0 | 6 | 87 |
| Otophorus haemorrhoidalis | dweller | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 22 |
| Parammoecius corvinus | dweller | 387 | 152 | 128 | 5 | 325 | 288 | 82 | 40 | 1407 |
| Planolinoides borealis | dweller | 11 | 7 | 2 | 0 | 1 | 2 | 1 | 1 | 25 |
| Planolinus fasciatus | dweller | 1 | 4 | 6 | 2 | 8 | 9 | 24 | 30 | 84 |
| Rhodaphodius foetens | dweller | 0 | 0 | 5 | 6 | 0 | 3 | 104 | 469 | 587 |
| Sericotrupes niger | tunneler | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 3 | 7 |
| Sisyphus schaefferi schaefferi | roller | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 8 | 11 |
| Trypocopris vernalis fauveli | tunneler | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 17 |
| Volinus sticticus | dweller | 1388 | 2663 | 2488 | 20 | 0 | 0 | 0 | 0 | 6559 |
| | | 2896 | 3574 | 3625 | 2797 | 886 | 1431 | 2640 | 9240 | TOT. 27089 |