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## Supporting Information

**Table S1** Locations of the six study sites. Latitude, longitude and altitude are given for the centre of each 40 x 40 m study plot. Latitude and longitude are given in decimal degrees to 5 decimal places, and therefore are accurate to within approximately 1 m. Aspect and slope were calculated from Intermap NEXTMap 5 data, accessed through Strava.

| Site | Treatment | Latitude<br>(°) | Longitude<br>(°) | Altitude<br>(m asl) | Aspect | Slope (%) |
|------|-----------|-----------------|------------------|---------------------|--------|-----------|
| F1   | Burned    | 37.17713        | -7.86082         | 261                 | E      | 20        |
| F2   | Burned    | 37.19641        | -7.86006         | 372                 | WNW    | 30        |
| F3   | Burned    | 37.19848        | -7.85699         | 449                 | W      | 22.5      |
| NF1  | Unburned  | 37.16919        | -7.86516         | 340                 | NE     | 14        |
| NF2  | Unburned  | 37.17334        | -7.86506         | 317                 | W      | 12        |
| NF3  | Unburned  | 37.18149        | -7.86588         | 245                 | NW     | 10        |

**Table S2** Summary of the plant families identified on floristic surveys, with the number of species and the total number of 1 x 1 m quadrats in which members of each family was recorded. *Apiaceae* includes one flower type not identified beyond family level, and therefore was represented by *at least* four species

| Family          | No.<br>species | No.<br>quadrats |
|-----------------|----------------|-----------------|
| Adoxaceae       | 1              | 4               |
| Amaryllidaceae  | 2              | 17              |
| Apiaceae        | 4*             | 29              |
| Asparagaceae    | 2              | 3               |
| Asteraceae      | 14             | 379             |
| Boraginaceae    | 2              | 39              |
| Brassicaceae    | 1              | 3               |
| Campanulaceae   | 2              | 25              |
| Caprifoliaceae  | 2              | 16              |
| Caryophyllaceae | 2              | 8               |
| Cistaceae       | 4              | 167             |
| Ericaceae       | 3              | 26              |
| Euphorbiaceae   | 1              | 4               |
| Fabaceae        | 10             | 285             |
| Gentianaceae    | 1              | 36              |
| Geraniaceae     | 1              | 2               |
| Iridaceae       | 2              | 11              |
| Lamiaceae       | 3              | 200             |
| Linaceae        | 1              | 1               |
| Orchidaceae     | 1              | 1               |
| Papaveraceae    | 1              | 2               |
| Plantaginaceae  | 1              | 30              |
| Primulaceae     | 1              | 24              |
| Ranunculaceae   | 2              | 30              |
| Resedaceae      | 2              | 23              |
| Rosaceae        | 2              | 12              |
| Solanaceae      | 1              | 39              |
| Thymelaeaceae   | 1              | 8               |

**Table S3** R packages used during analysis. Packages were loaded into at least one script during the analytical process but may not have formed part of the final analysis.

| Package      | Citation   |
|--------------|--|
| AICcmodavg   | Mazerolle, M.J. (2016) AICcmodavg: Model selection and multimodel inference based on (Q)AIC(c). R package version 2.1-0. <a href="https://cran.r-project.org/package=AICcmodavg">https://cran.r-project.org/package=AICcmodavg</a> .   |
| arm          | Gelman, A. & Su, Y.-S. (2015) arm: Data Analysis Using Regression and Multilevel/Hierarchical Models. R package version 1.8-6. <a href="https://CRAN.R-project.org/package=arm">https://CRAN.R-project.org/package=arm</a> .   |
| bipartite    | Dormann, C.F., Gruber B. & Fruend, J. (2008) Introducing the bipartite Package: Analysing Ecological Networks. <i>R News</i> , <b>8</b> , 8–11.  |
| car          | Fox, J. & Weisberg, S. (2011) <i>An {R} Companion to Applied Regression</i> . Second Edition. Sage, Thousand Oaks, CA, USA.  |
| data.table   | Dowle, M., Srinivasan, A., Short, T., Lianoglou, S., Saporta, R. & Antonyan, E. (2015) data.table: Extension of Data.frame. R package version 1.9.6. <a href="https://CRAN.R-project.org/package=data.table">https://CRAN.R-project.org/package=data.table</a> .   |
| effects      | Fox, J. (2003) Effect Displays in R for Generalised Linear Models. <i>Journal of Statistical Software</i> , <b>8</b> , 1–27.   |
| ggmap        | Kahle, D. & Wickham, H. (2013) ggmap: Spatial Visualization with ggplot2. <i>The R Journal</i> , <b>5</b> , 144–161.   |
| ggplot2      | Wickham, H. (2009) <i>ggplot2: Elegant Graphics for Data Analysis</i> . Springer-Verlag, New York, USA.  |
| glmmADMB     | Fournier, D.A., Skaug, H.J., Ancheta, J., Ianelli, J., Magnusson, A., Maunder, M., Nielsen, A. & Sibert, J. (2012) AD Model Builder: using automatic differentiation for statistical inference of highly parameterized complex nonlinear models. <i>Optimization Methods and Software</i> , <b>27</b> , 233–249. |
| gridExtra    | Auguie, B. (2016) gridExtra: Miscellaneous Functions for "Grid" Graphics. R package version 2.2.1. <a href="https://CRAN.R-project.org/package=gridExtra">https://CRAN.R-project.org/package=gridExtra</a> .   |
| lme4         | Bates, D., Maechler, M., Bolker, B. & Walker, S. (2015). Fitting Linear Mixed-Effects Models Using lme4. <i>Journal of Statistical Software</i> , <b>67</b> , 1–48.  |
| MASS         | Venables, W. N. & Ripley, B. D. (2002) <i>Modern Applied Statistics with S</i> . Fourth Edition. Springer, New York, USA.  |
| plyr         | Wickham, H. (2011) The Split-Apply-Combine Strategy for Data Analysis. <i>Journal of Statistical Software</i> , <b>40</b> , 1–29.  |
| RColorBrewer | Neuwirth, E. (2014) RColorBrewer: ColorBrewer Palettes. R package version 1.1-2. <a href="https://CRAN.R-project.org/package=RColorBrewer">https://CRAN.R-project.org/package=RColorBrewer</a> .   |
| reshape2     | Wickham, H. (2007) Reshaping Data with the reshape Package.  |

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*Journal of Statistical Software*, **21**, 1–20.

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|---------------|---|
| RVAideMemoire | Hervé, M. (2016) RVAideMemoire: Diverse Basic Statistical and Graphical Functions. R package version 0.9-56. <a href="https://CRAN.R-project.org/package=RVAideMemoire">https://CRAN.R-project.org/package=RVAideMemoire</a> .  |
| scales        | Wickham, H. (2016) scales: Scale Functions for Visualization. R package version 0.4.1. <a href="https://CRAN.R-project.org/package=scales">https://CRAN.R-project.org/package=scales</a> .  |
| svglite       | Wickham, H., Henry, L., Luciani, T.J., Decorde, M. & Lise, V. (2016) svglite: An 'SVG' Graphics Device. R package version 1.2.0. <a href="https://CRAN.R-project.org/package=svglite">https://CRAN.R-project.org/package=svglite</a> .  |
| tidyr         | Wickham, H. (2016) tidyr: Easily Tidy Data with `spread()` and `gather()` Functions. R package version 0.5.0. <a href="https://CRAN.R-project.org/package=tidyr">https://CRAN.R-project.org/package=tidyr</a> .   |
| vegan         | Oksanen, J., Blanchet, F.G., Kindt, R., Legendre, P., Minchin, P.R., O'Hara, R.B., Simpson, G.L., Solymos, P., Stevens, M.H.H. & Wagner, H. (2016) vegan: Community Ecology Package. R package version 2.3-5. <a href="https://CRAN.R-project.org/package=vegan">https://CRAN.R-project.org/package=vegan</a> . |

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**Table S4** Summary of captured insects according to Order, Family, Genus, number of identified species, number of morphotypes and the total number of individuals.

| Order              | Family           | Genus         | Identified species               | No. morphotypes | No. individuals |
|--------------------|------------------|---------------|----------------------------------|-----------------|-----------------|
| <b>Coleoptera</b>  |                  |               |                                  | 3               | 7               |
|                    | Cerambycidae     |               |                                  | 4               | 8               |
|                    |                  |               | <i>Nustera distigma</i>          |                 | 1               |
|                    | Cetoniidae       |               |                                  | 3               | 10              |
|                    |                  | Protaetia     |                                  | 1               | 2               |
|                    |                  |               | <i>Protaetia opaca</i>           |                 | 2               |
|                    |                  |               | <i>Oxythyrea funesta</i>         |                 | 89              |
|                    |                  |               | <i>Tropinota squalida</i>        |                 | 14              |
|                    | Chrysomelidae    |               |                                  | 3               | 22              |
|                    |                  |               | <i>Chrysolina americana</i>      |                 | 1               |
|                    |                  |               | <i>Dicladispa testacea</i>       |                 | 1               |
|                    |                  |               | <i>Lachnaia hirta</i>            |                 | 1               |
|                    | Cleridae         |               |                                  | 1               | 1               |
|                    |                  |               | <i>Trichodes octopunctatus</i>   |                 | 1               |
|                    | Coccinellidae    |               |                                  | 1               | 4               |
|                    |                  |               | <i>Coccinella septempunctata</i> |                 | 5               |
|                    | Curculionidae    |               |                                  | 1               | 3               |
|                    | Dasytidae        |               |                                  | 2               | 17              |
|                    | Elateridae       |               |                                  | 4               | 19              |
|                    | Malachiidae      |               |                                  | 1               | 2               |
|                    | Meloidae         |               |                                  | 4               | 9               |
|                    | Mordellidae      |               |                                  | 1               | 3               |
|                    | Oedemeridae      |               |                                  | 4               | 8               |
|                    | Tenebrionidae    |               |                                  | 2               | 3               |
|                    |                  |               | <i>Heliothaurus ruficollis</i>   |                 | 82              |
| <b>Diptera</b>     |                  |               |                                  | 1               | 2               |
|                    | Bombyliidae      |               |                                  | 3               | 7               |
|                    | Empididae        |               |                                  | 2               | 2               |
|                    | Syrphidae        |               |                                  | 3               | 5               |
|                    | Tachinidae       |               |                                  | 3               | 5               |
|                    | Tipulidae        |               |                                  | 1               | 1               |
| <b>Hemiptera</b>   |                  |               |                                  | 2               | 2               |
|                    | Acanthosomatidae |               |                                  | 1               | 1               |
|                    | Pentatomidae     |               |                                  | 1               | 1               |
|                    |                  |               | <i>Graphosoma lineatum</i>       |                 | 2               |
| <b>Heteroptera</b> | Miridae          |               |                                  | 1               | 1               |
| <b>Hymenoptera</b> | Andrenidae       |               |                                  | 2               | 2               |
|                    |                  | Andrena       |                                  | 3               | 9               |
|                    |                  | Panurgus      |                                  | 1               | 1               |
|                    | Apidae           |               |                                  | 1               | 1               |
|                    |                  | Eucera        |                                  | 1               | 1               |
|                    |                  | Xylocopa      |                                  | 1               | 1               |
|                    |                  |               | <i>Apis mellifera</i>            |                 | 79              |
|                    |                  |               | <i>Bombus terrestris</i>         |                 | 2               |
|                    |                  |               | <i>Bombus hortorum</i>           |                 | 2               |
|                    | Crabronidae      |               |                                  | 1               | 1               |
|                    | Halictidae       |               |                                  | 3               | 5               |
|                    |                  | Lasioglossum  |                                  | 3               | 4               |
|                    | Colletidae       | Hylaeus       |                                  | 1               | 1               |
|                    | Ichneumonidae    |               |                                  | 1               | 1               |
|                    | Megachilidae     |               |                                  | 1               | 1               |
|                    |                  | Rhodanthidium |                                  | 1               | 1               |
|                    | Sphecidae        |               |                                  | 1               | 1               |
|                    | Vespidae         |               |                                  | 2               | 2               |
|                    |                  |               | <i>Polistes dominula</i>         |                 | 4               |
|                    |                  |               | <i>Vespa crabro</i>              |                 | 3               |
|                    |                  |               | <i>Vespula vulgaris</i>          |                 | 5               |

| Order               | Family        | Genus      | Identified species                | No. morphotypes | No. individuals |
|---------------------|---------------|------------|-----------------------------------|-----------------|-----------------|
| <b>Lepidoptera</b>  |               |            |                                   | 1               | 1               |
|                     | Erebidae      |            | <i>Utetheisa pulchella</i>        |                 | 1               |
|                     | Gelechiidae   |            | <i>Dichomeris lamprostoma</i>     |                 | 1               |
|                     | Geometridae   |            | <i>Aspitates ochrearia</i>        |                 | 1               |
|                     |               |            | <i>Scotopteryx peribolata</i>     |                 | 1               |
|                     | Hesperiidae   | Thymelicus |                                   | 1               | 1               |
|                     | Lasiocampidae |            | <i>Trichiura ilicis</i>           |                 | 1               |
|                     | Lycaenidae    |            | <i>Aricia cramera</i>             |                 | 2               |
|                     |               |            | <i>Lampides boeticus</i>          |                 | 1               |
|                     |               |            | <i>Leptotes pirithous</i>         |                 | 8               |
|                     |               |            | <i>Satyrium ilicis</i>            |                 | 2               |
|                     |               |            | <i>Plebejus argus</i>             |                 | 1               |
|                     |               |            | <i>Polyommatus icarus</i>         |                 | 2               |
|                     | Noctuidae     |            | <i>Autographa gamma</i>           |                 | 1               |
|                     |               |            | <i>Synthimia fixa</i>             |                 | 1               |
|                     | Nymphalidae   |            | <i>Coenonympha pamphilus</i>      |                 | 7               |
|                     |               |            | <i>Lasiommata megera</i>          |                 | 1               |
|                     |               |            | <i>Maniola jurtina</i>            |                 | 20              |
|                     |               |            | <i>Melanargia ines</i>            |                 | 5               |
|                     |               |            | <i>Pararge aegeria</i>            |                 | 1               |
|                     |               |            | <i>Pyronia cecilia</i>            |                 | 2               |
|                     |               |            | <i>Pyronia tithonus</i>           |                 | 2               |
|                     |               |            | <i>Vanessa cardui</i>             |                 | 2               |
|                     | Papilionidae  |            | <i>Iphiclides feisthamelii</i>    |                 | 1               |
|                     |               |            | <i>Papilio machaon</i>            |                 | 1               |
|                     | Pieridae      |            | <i>Colias croceus</i>             |                 | 2               |
|                     |               |            | <i>Euchloe crameri</i>            |                 | 6               |
|                     |               |            | <i>Pieris brassicae</i>           |                 | 1               |
|                     |               |            | <i>Pieris rapae</i>               |                 | 4               |
|                     |               |            | <i>Pontia daplidice</i>           |                 | 1               |
|                     | Pterophoridae |            | <i>Amblyptilia acanthadactyla</i> |                 | 1               |
|                     | Pyralidae     |            | <i>Endotricha flammealis</i>      |                 | 1               |
|                     | Tortricidae   |            |                                   | 1               | 1               |
| <b>Neuroptera</b>   |               |            |                                   | 1               | 1               |
|                     | Chrysopidae   |            |                                   | 1               | 1               |
| <b>Unidentified</b> |               |            |                                   | 10              | 15              |
| <b>Totals</b>       | <b>44</b>     | <b>9</b>   | <b>47</b>                         | <b>91</b>       | <b>572</b>      |

**Table S5** – Number of pollen grains found on insects, according to species and family, grouped by season and by treatment.

| Pollen species                  | Family         | Total Count | Spring Count | Summer count | Autumn count | Winter count | Burned count | Unburned count |
|---------------------------------|----------------|-------------|--------------|--------------|--------------|--------------|--------------|----------------|
| <i>Allium paniculatum</i>       | Amaryllidaceae | 50          | 3            | 0            | 0            | 47           | 49           | 1              |
| <i>Anagallis arvensis</i>       | Primulaceae    | 536         | 434          | 11           | 12           | 79           | 407          | 129            |
| <i>Anarrhinum bellidifolium</i> | Plantaginaceae | 4746        | 4535         | 118          | 1            | 92           | 67           | 4679           |
| <i>Andryala integrifolia</i>    | Asteraceae     | 5756        | 4289         | 1            | 445          | 1021         | 5590         | 166            |
| <i>Anthyllis vulneraria</i>     | Fabaceae       | 611         | 529          | 39           | 12           | 31           | 224          | 387            |
| <i>Apiaceae</i>                 | Apiaceae       | 4407        | 4296         | 29           | 14           | 68           | 3252         | 1155           |
| <i>Arbutus unedo</i>            | Ericaceae      | 81          | 0            | 1            | 79           | 1            | 79           | 2              |
| <i>Calluna vulgaris</i>         | Ericaceae      | 197         | 159          | 5            | 0            | 33           | 167          | 30             |
| <i>Campanula lusitanica</i>     | Campanulaceae  | 308         | 243          | 16           | 5            | 44           | 165          | 143            |
| <i>Carlina racemosa</i>         | Asteraceae     | 2           | 2            | 0            | 0            | 0            | 2            | 0              |
| <i>Centaureum erythraea</i>     | Gentianaceae   | 54          | 32           | 2            | 10           | 10           | 14           | 40             |
| <i>Centranthus calcitrapae</i>  | Valerianaceae  | 139         | 84           | 0            | 2            | 53           | 139          | 0              |
| <i>Chamaemelum mixtum</i>       | Asteraceae     | 1856        | 1676         | 6            | 1            | 173          | 49           | 1807           |
| <i>Cistus crispus</i>           | Cistaceae      | 4147        | 3982         | 1            | 36           | 128          | 279          | 3868           |
| <i>Cistus ladanifer</i>         | Cistaceae      | 1788        | 1082         | 3            | 25           | 678          | 1159         | 629            |
| <i>Cistus salviifolius</i>      | Cistaceae      | 7304        | 2319         | 4            | 28           | 4953         | 1792         | 5505           |
| <i>Cistus sp.</i>               | Cistaceae      | 4309        | 939          | 373          | 0            | 2997         | 3911         | 398            |
| <i>Coleostephus myconis</i>     | Asteraceae     | 15432       | 13592        | 5            | 1754         | 81           | 15034        | 398            |
| <i>Cynara cardunculus</i>       | Asteraceae     | 530         | 312          | 186          | 0            | 32           | 38           | 492            |
| <i>Daphne gnidium</i>           | Thymelaeaceae  | 200         | 142          | 12           | 17           | 29           | 53           | 147            |
| <i>Daucus carota</i>            | Apiaceae       | 377         | 70           | 233          | 9            | 65           | 312          | 65             |
| <i>Echium plantagineum</i>      | Boraginaceae   | 262         | 239          | 15           | 0            | 8            | 209          | 53             |
| <i>Erica arborea</i>            | Ericaceae      | 46          | 16           | 0            | 1            | 29           | 31           | 15             |
| <i>Eryngium campestre</i>       | Apiaceae       | 61          | 32           | 10           | 15           | 4            | 61           | 0              |
| <i>Euphorbia exigua</i>         | Euphorbiaceae  | 14          | 14           | 0            | 0            | 0            | 0            | 14             |
| <i>Euphorbia sp.</i>            | Euphorbiaceae  | 2           | 2            | 0            | 0            | 0            | 2            | 0              |
| <i>Galactites tomentosus</i>    | Asteraceae     | 3547        | 2717         | 1            | 6            | 823          | 3493         | 54             |
| <i>Genista triacanthos</i>      | Fabaceae       | 2015        | 467          | 0            | 768          | 780          | 2015         | 0              |
| <i>Gladiolus italicus</i>       | Iridaceae      | 2           | 0            | 0            | 0            | 2            | 2            | 0              |
| <i>Helychrysum stoechas</i>     | Asteraceae     | 4178        | 2295         | 360          | 109          | 1414         | 1790         | 2388           |
| <i>Jasione montana</i>          | Campanulaceae  | 2382        | 722          | 50           | 34           | 1576         | 2118         | 264            |
| <i>Lavandula stoechas</i>       | Lamiaceae      | 11574       | 10051        | 26           | 5            | 1492         | 2873         | 8701           |
| <i>Leontodon taraxacoides</i>   | Asteraceae     | 5512        | 3661         | 216          | 0            | 1635         | 2131         | 3381           |
| <i>Leucojum autumnale</i>       | Amaryllidaceae | 134         | 22           | 5            | 102          | 5            | 121          | 13             |
| <i>Lithodora prostrata</i>      | Boraginaceae   | 4172        | 169          | 0            | 27           | 3976         | 4169         | 3              |
| <i>Logfia gallica</i>           | Asteraceae     | 32          | 31           | 0            | 0            | 1            | 13           | 19             |
| <i>Lotus parviflorus</i>        | Fabaceae       | 16          | 0            | 0            | 0            | 16           | 16           | 0              |
| <i>Lotus subbiflorus</i>        | Fabaceae       | 1073        | 1073         | 0            | 0            | 0            | 0            | 1073           |
| <i>Ornithogalum broteroi</i>    | Asparagaceae   | 265         | 253          | 5            | 4            | 3            | 245          | 20             |
| <i>Pulicaria odora</i>          | Asteraceae     | 9292        | 8744         | 263          | 232          | 53           | 5695         | 3597           |



| <b>Pollen species</b>        | <b>Family</b>   | <b>Total Count</b> | <b>Spring Count</b> | <b>Summer count</b> | <b>Autumn count</b> | <b>Winter count</b> | <b>Burned count</b> | <b>Unburned count</b> |
|------------------------------|-----------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|
| <i>Pulicaria paludosa</i>    | Asteraceae      | 228                | 150                 | 3                   | 27                  | 48                  | 133                 | 95                    |
| <i>Ranunculus bullatus</i>   | Ranunculaceae   | 4                  | 1                   | 3                   | 0                   | 0                   | 0                   | 4                     |
| <i>Ranunculus gramineus</i>  | Ranunculaceae   | 1125               | 633                 | 124                 | 0                   | 368                 | 660                 | 465                   |
| <i>Ranunculus sp.</i>        | Ranunculaceae   | 9                  | 9                   | 0                   | 0                   | 0                   | 9                   | 0                     |
| <i>Reseda media</i>          | Resedaceae      | 726                | 615                 | 20                  | 62                  | 29                  | 647                 | 79                    |
| <i>Sanguisorba minor</i>     | Rosaceae        | 6                  | 6                   | 0                   | 0                   | 0                   | 0                   | 6                     |
| <i>Sanguisorba verrucosa</i> | Rosaceae        | 376                | 361                 | 0                   | 8                   | 7                   | 133                 | 243                   |
| <i>Scilla autumnalis*</i>    | Asparagaceae    | 15                 | 0                   | 0                   | 0                   | 15                  | 15                  | 0                     |
| <i>Scilla monophyllos*</i>   | Asparagaceae    | 42                 | 6                   | 7                   | 2                   | 27                  | 34                  | 8                     |
| <i>Silene gallica</i>        | Caryophyllaceae | 80                 | 60                  | 1                   | 7                   | 12                  | 42                  | 38                    |
| <i>Solanum nigrum</i>        | Solanaceae      | 252                | 127                 | 12                  | 90                  | 23                  | 107                 | 145                   |
| <i>Spergularia purpurea</i>  | Caryophyllaceae | 52                 | 15                  | 10                  | 7                   | 20                  | 42                  | 10                    |
| <i>Stachys arvensis</i>      | Lamiaceae       | 85                 | 84                  | 0                   | 0                   | 1                   | 84                  | 1                     |
| <i>Thymus mastichina</i>     | Lamiaceae       | 194                | 174                 | 0                   | 3                   | 17                  | 92                  | 102                   |
| <i>Trifolium arvense</i>     | Fabaceae        | 5660               | 5374                | 8                   | 213                 | 65                  | 5551                | 109                   |
| <i>Tuberaria guttata</i>     | Cistaceae       | 26866              | 25960               | 301                 | 3                   | 602                 | 34                  | 26832                 |
| <i>Ulex argenteus</i>        | Fabaceae        | 8846               | 1837                | 3041                | 0                   | 3968                | 7425                | 1421                  |
| <i>Ulex eriocladus</i>       | Fabaceae        | 9225               | 144                 | 2                   | 5351                | 3728                | 6534                | 2691                  |
| <i>Ulex sp.</i>              | Fabaceae        | 17                 | 0                   | 0                   | 0                   | 17                  | 17                  | 0                     |
| <i>Urginea maritima</i>      | Asparagaceae    | 176                | 163                 | 3                   | 6                   | 4                   | 170                 | 6                     |
| <i>Viburnum tinus</i>        | Adoxaceae       | 29                 | 7                   | 0                   | 0                   | 22                  | 20                  | 9                     |
| <b>Total pollen count</b>    |                 | <b>151422</b>      |                     |                     |                     |                     |                     |                       |

\* - Species identified outside the quadrats during floristic surveys.

**Table S6** R software outputs showing summary of analyses of the effects of burning and season over consecutive sampling periods on the abundance (A) and species richness (B) of insects. Intercept value represents unburned sites in autumn, sampling period 0, and is the natural logarithm of the estimate, so  $e^{(\text{intercept})}$  gives the true estimated value. For other levels of each variable, estimated value =  $e^{(\text{intercept})} \times e^{\text{ES}}$ , where ES = effect size for that level from the statistical model, so  $e^{\text{ES}}$  is the multiplicative effect of the parameter in question.

A. Insect Abundance

```
Generalized linear mixed model fit by maximum likelihood (Laplace
Approximation) [glmerMod]
Family: poisson ( log )
Formula: Count ~ Treatment * Order + (1 | Site)
Data: dframe3
```

| AIC   | BIC   | logLik | deviance | df.resid |
|-------|-------|--------|----------|----------|
| 575.6 | 623.9 | -268.8 | 537.6    | 75       |

Scaled residuals:

| Min     | 1Q      | Median  | 3Q     | Max    |
|---------|---------|---------|--------|--------|
| -3.2066 | -0.9665 | -0.2279 | 0.5000 | 4.8677 |

Random effects:

| Groups Name      | Variance  | Std.Dev. |
|------------------|-----------|----------|
| Site (Intercept) | 6.545e-19 | 8.09e-10 |

Number of obs: 94, groups: Site, 6

Fixed effects:

|                      | Estimate | Std. Error | z value | Pr(> z ) |     |
|----------------------|----------|------------|---------|----------|-----|
| (Intercept)          | 1.6529   | 0.1459     | 11.332  | < 2e-16  | *** |
| TreatmentFire        | 0.4420   | 0.1915     | 2.309   | 0.020968 | *   |
| Order2               | -0.9598  | 0.4335     | -2.214  | 0.026836 | *   |
| Order3               | -0.7366  | 0.3482     | -2.115  | 0.034408 | *   |
| Order4               | -0.2666  | 0.2509     | -1.063  | 0.287894 |     |
| Order5               | 0.7894   | 0.1891     | 4.174   | 2.99e-05 | *** |
| Order6               | -1.2962  | 0.3482     | -3.722  | 0.000197 | *** |
| Order7               | -0.9598  | 0.4335     | -2.214  | 0.026836 | *   |
| Order8               | 0.2640   | 0.2251     | 1.173   | 0.240957 |     |
| Order9               | 0.8594   | 0.2198     | 3.910   | 9.22e-05 | *** |
| TreatmentFire:Order2 | -0.4420  | 0.5730     | -0.771  | 0.440458 |     |
| TreatmentFire:Order3 | -1.3583  | 0.6856     | -1.981  | 0.047556 | *   |
| TreatmentFire:Order4 | 0.6731   | 0.3078     | 2.187   | 0.028735 | *   |
| TreatmentFire:Order5 | -0.5653  | 0.2599     | -2.175  | 0.029637 | *   |
| TreatmentFire:Order6 | -0.3467  | 0.4770     | -0.727  | 0.467351 |     |
| TreatmentFire:Order7 | -0.1543  | 0.5156     | -0.299  | 0.764672 |     |
| TreatmentFire:Order8 | -0.1077  | 0.2892     | -0.372  | 0.709677 |     |
| TreatmentFire:Order9 | -0.2028  | 0.2915     | -0.696  | 0.486605 |     |

Single term deletions

Model:

```
Count ~ Treatment * Order + (1 | Site)
      Df   AIC   LRT Pr(Chi)
<none>      575.63
Treatment:Order  8 583.27 23.645 0.002628 **
```

## B. Insects Species Richness

Generalized linear mixed model fit by maximum likelihood (Laplace Approximation) [glmerMod]

Family: poisson ( log )

Formula: SpeciesRichness ~ Treatment \* Order + (1 | Site)

Data: dframe3

| AIC   | BIC   | logLik | deviance | df.resid |
|-------|-------|--------|----------|----------|
| 383.5 | 431.9 | -172.8 | 345.5    | 75       |

Scaled residuals:

| Min     | 1Q      | Median  | 3Q     | Max    |
|---------|---------|---------|--------|--------|
| -1.6209 | -0.7071 | -0.1075 | 0.6299 | 2.1930 |

Random effects:

| Groups Name      | Variance | Std.Dev. |
|------------------|----------|----------|
| Site (Intercept) | 0        | 0        |

Number of obs: 94, groups: Site, 6

Fixed effects:

|                      | Estimate | Std. Error | z value | Pr(> z ) |     |
|----------------------|----------|------------|---------|----------|-----|
| (Intercept)          | 1.35812  | 0.16903    | 8.035   | 9.38e-16 | *** |
| TreatmentFire        | 0.08880  | 0.24080    | 0.369   | 0.71231  |     |
| Order2               | -0.66498 | 0.44186    | -1.505  | 0.13233  |     |
| Order3               | -0.66498 | 0.39188    | -1.697  | 0.08972  | .   |
| Order4               | -0.15415 | 0.28031    | -0.550  | 0.58236  |     |
| Order5               | 0.46103  | 0.23579    | 1.955   | 0.05055  | .   |
| Order6               | -1.10681 | 0.37374    | -2.961  | 0.00306  | **  |
| Order7               | -0.66498 | 0.44186    | -1.505  | 0.13234  |     |
| Order8               | 0.12348  | 0.27208    | 0.454   | 0.64994  |     |
| Order9               | 0.25131  | 0.30861    | 0.814   | 0.41544  |     |
| TreatmentFire:Order2 | -0.08880 | 0.59131    | -0.150  | 0.88063  |     |
| TreatmentFire:Order3 | -0.78194 | 0.71855    | -1.088  | 0.27650  |     |
| TreatmentFire:Order4 | -0.06899 | 0.40842    | -0.169  | 0.86585  |     |
| TreatmentFire:Order5 | -0.23398 | 0.34097    | -0.686  | 0.49258  |     |
| TreatmentFire:Order6 | -0.08880 | 0.52934    | -0.168  | 0.86678  |     |
| TreatmentFire:Order7 | 0.13435  | 0.53974    | 0.249   | 0.80343  |     |
| TreatmentFire:Order8 | -0.41772 | 0.39506    | -1.057  | 0.29034  |     |
| TreatmentFire:Order9 | 0.33865  | 0.41003    | 0.826   | 0.40886  |     |

Single term deletions

Model:

SpeciesRichness ~ Treatment \* Order + (1 | Site)

|                 | Df | AIC    | LRT   | Pr(Chi) |
|-----------------|----|--------|-------|---------|
| <none>          |    | 383.54 |       |         |
| Treatment:Order | 8  | 372.20 | 4.663 | 0.7929  |

Model:

SpeciesRichness ~ Treatment + Order + (1 | Site)

|           | Df | AIC    | LRT    | Pr(Chi)       |
|-----------|----|--------|--------|---------------|
| <none>    |    | 372.20 |        |               |
| Treatment | 1  | 370.21 | 0.010  | 0.9221        |
| Order     | 8  | 427.64 | 71.439 | 2.539e-12 *** |

**Table S7** R software outputs showing summary of analyses of the effects of burning and season over consecutive sampling periods on pollen transport (A. pollen load and B. pollen type). Intercept value represents unburned sites in the first spring, and is the base 10 logarithm of the estimate, so  $10^{(\text{intercept})}$  gives the true estimated value. For other levels of each variable, estimated value =  $10^{(\text{intercept})} \times 10^{\text{ES}}$ , where ES = effect size for that level from the statistical model, so  $10^{\text{ES}}$  is the multiplicative effect of the parameter in question.

A. Pollen Load

```
Linear mixed model fit by REML ['lmerMod']
Formula: log10(PollenLoad + 1) ~ Treatment + Order + Treatment * Order +
(1 | Site)
Data: dframe1
```

REML criterion at convergence: 1218.6

Scaled residuals:

| Min     | 1Q      | Median  | 3Q     | Max    |
|---------|---------|---------|--------|--------|
| -2.9451 | -0.6275 | -0.0238 | 0.5986 | 3.4846 |

Random effects:

| Groups | Name        | Variance | Std.Dev |
|--------|-------------|----------|---------|
| Site   | (Intercept) | 0.02495  | 0.157   |
|        | Residual    | 0.47211  | 0.687   |

Number of obs: 572, groups: Site, 6

Fixed effects:

|                      | Estimate | Std. Error | t value |
|----------------------|----------|------------|---------|
| (Intercept)          | 1.55145  | 0.13554    | 11.446  |
| TreatmentFire        | 0.59399  | 0.18436    | 3.222   |
| Order2               | -0.32662 | 0.29960    | -1.090  |
| Order3               | -0.42639 | 0.23960    | -1.780  |
| Order4               | 0.03083  | 0.17249    | 0.179   |
| Order5               | 0.38767  | 0.12998    | 2.983   |
| Order6               | 0.16892  | 0.23944    | 0.705   |
| Order7               | -0.19814 | 0.29847    | -0.664  |
| Order8               | 0.15243  | 0.15654    | 0.974   |
| Order9               | 0.61369  | 0.15102    | 4.064   |
| TreatmentFire:Order2 | -0.62100 | 0.39595    | -1.568  |
| TreatmentFire:Order3 | -0.63886 | 0.47125    | -1.356  |
| TreatmentFire:Order4 | -0.48986 | 0.21160    | -2.315  |
| TreatmentFire:Order5 | -0.76111 | 0.17953    | -4.239  |
| TreatmentFire:Order6 | -0.80604 | 0.32800    | -2.457  |
| TreatmentFire:Order7 | -0.05769 | 0.35494    | -0.163  |
| TreatmentFire:Order8 | -0.31886 | 0.20047    | -1.591  |
| TreatmentFire:Order9 | -0.82712 | 0.20123    | -4.110  |

Single term deletions

Model:

```
log10(PollenLoad + 1) ~ Treatment + Order + Treatment * Order +
(1 | Site)
```

|                 | Df | AIC  | LRT    | Pr(Chi)       |
|-----------------|----|------|--------|---------------|
| <none>          |    | 1226 |        |               |
| Treatment:Order | 8  | 1238 | 28.009 | 0.0004725 *** |

## B. Pollen Type

Linear mixed model fit by REML ['lmerMod']

Formula:

$\log_{10}(\text{PollenTypes} + 1) \sim \text{Treatment} + \text{Order} + \text{Treatment} * \text{Order} +$   
(1 | Site)

Data: dframe1

REML criterion at convergence: -175.1

Scaled residuals:

| Min     | 1Q      | Median | 3Q     | Max    |
|---------|---------|--------|--------|--------|
| -3.5314 | -0.6221 | 0.0362 | 0.7192 | 2.4624 |

Random effects:

| Groups | Name        | Variance | Std.Dev. |
|--------|-------------|----------|----------|
| Site   | (Intercept) | 0.001888 | 0.04345  |
|        | Residual    | 0.038166 | 0.19536  |

Number of obs: 572, groups: Site, 6

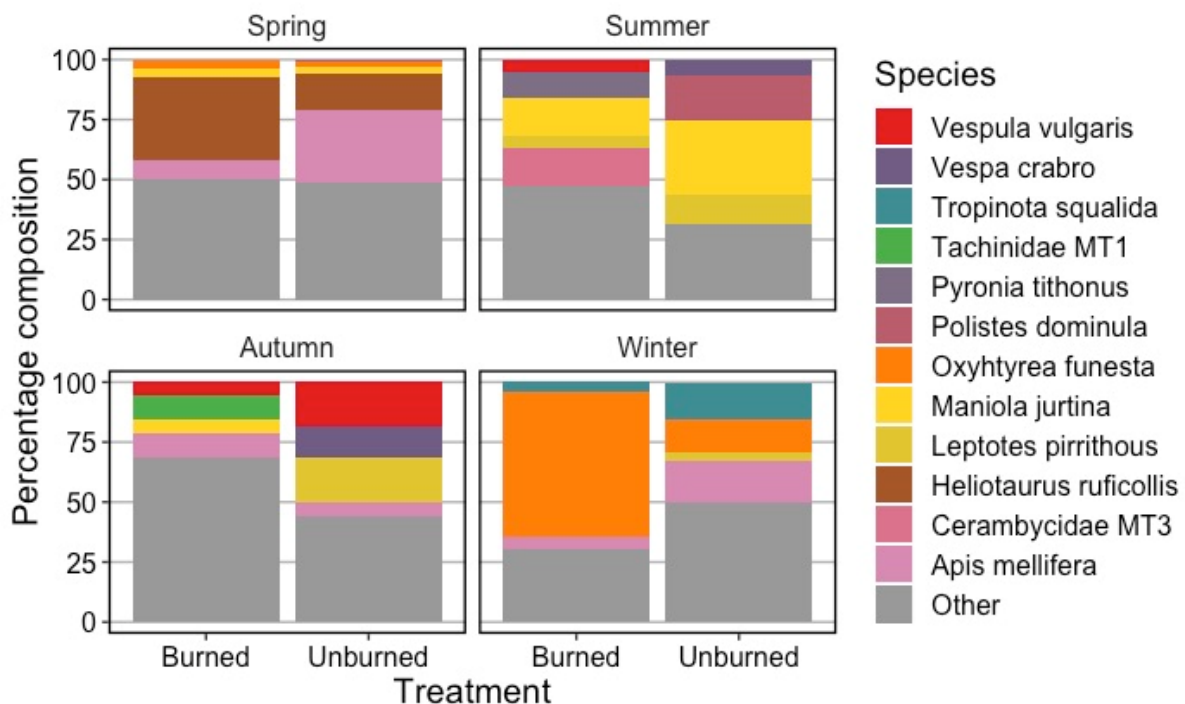
Fixed effects:

|                      | Estimate | Std. Error | t value |
|----------------------|----------|------------|---------|
| (Intercept)          | 0.63246  | 0.03798    | 16.654  |
| TreatmentFire        | 0.20680  | 0.05159    | 4.008   |
| Order2               | -0.02242 | 0.08518    | -0.263  |
| Order3               | -0.12098 | 0.06812    | -1.776  |
| Order4               | -0.02393 | 0.04904    | -0.488  |
| Order5               | -0.01950 | 0.03696    | -0.528  |
| Order6               | 0.04339  | 0.06808    | 0.637   |
| Order7               | 0.07695  | 0.08486    | 0.907   |
| Order8               | -0.02602 | 0.04450    | -0.585  |
| Order9               | 0.24951  | 0.04294    | 5.811   |
| TreatmentFire:Order2 | -0.27207 | 0.11257    | -2.417  |
| TreatmentFire:Order3 | -0.25821 | 0.13399    | -1.927  |
| TreatmentFire:Order4 | -0.16031 | 0.06016    | -2.665  |
| TreatmentFire:Order5 | -0.13779 | 0.05104    | -2.700  |
| TreatmentFire:Order6 | -0.31653 | 0.09326    | -3.394  |
| TreatmentFire:Order7 | -0.22185 | 0.10092    | -2.198  |
| TreatmentFire:Order8 | -0.21946 | 0.05699    | -3.851  |
| TreatmentFire:Order9 | -0.27552 | 0.05721    | -4.816  |

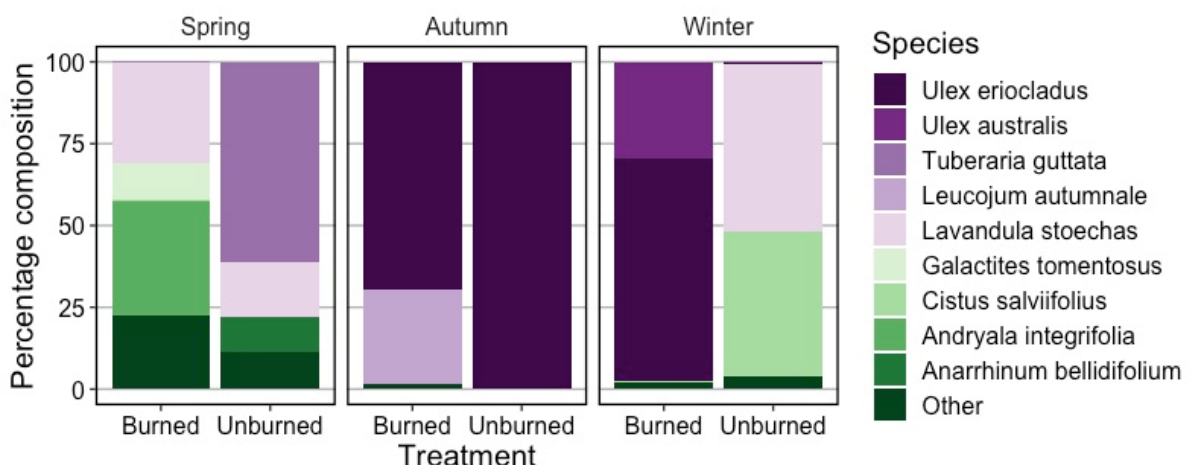
**Table S8** – Mean temperatures taken between 12 – 16 pm on each day of fieldwork.

| <b>Year</b> | <b>Dates</b> | <b>Mean Temperatures<br/>(°C)</b> |
|-------------|--------------|-----------------------------------|
| <b>2013</b> | 16 Apr       | <b>27.8</b>                       |
|             | 14 May       | <b>27.5</b>                       |
|             | 11 Jun       | <b>27.8</b>                       |
|             | 09 Jul       | <b>31.5</b>                       |
|             | 24 Sep       | <b>32.3</b>                       |
|             | 05 Nov       | <b>23.6</b>                       |
|             | 09 Dec       | <b>19.3</b>                       |
| <b>2014</b> | 28 Jan       | <b>15.4</b>                       |
|             | 19 Feb       | <b>20.3</b>                       |
|             | 25 Mar       | <b>24.5</b>                       |
|             | 29 Apr       | <b>33.8</b>                       |
|             | 03 Jun       | <b>34.6</b>                       |
|             | 15 Jul       | <b>37.4</b>                       |
|             | 12 Aug       | <b>34.2</b>                       |
|             | 23 Sep       | <b>24.0</b>                       |
|             | 28 Oct       | <b>25.7</b>                       |
|             | 02 Dec       | <b>22.5</b>                       |
| <b>2015</b> | 21 Jan       | <b>14.8</b>                       |
|             | 25 Feb       | <b>19.3</b>                       |
|             | 25 Mar       | <b>20.2</b>                       |
|             | 05 May       | <b>27.5</b>                       |

## Additional graphs

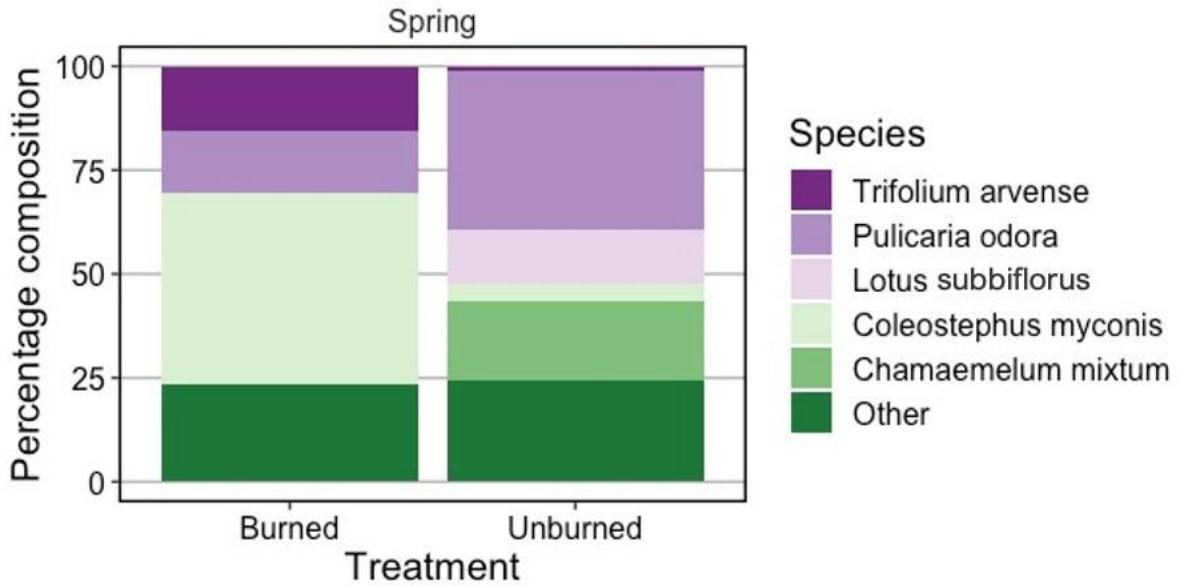


**Figure a.** Assemblage composition by species of insects caught in burned and unburned areas of Serra-do-Caldeirão, Portugal, and across seasons. Species never comprising >10% of individuals in any combination of season and treatment are grouped as “Others”, and all other families are shown independently.

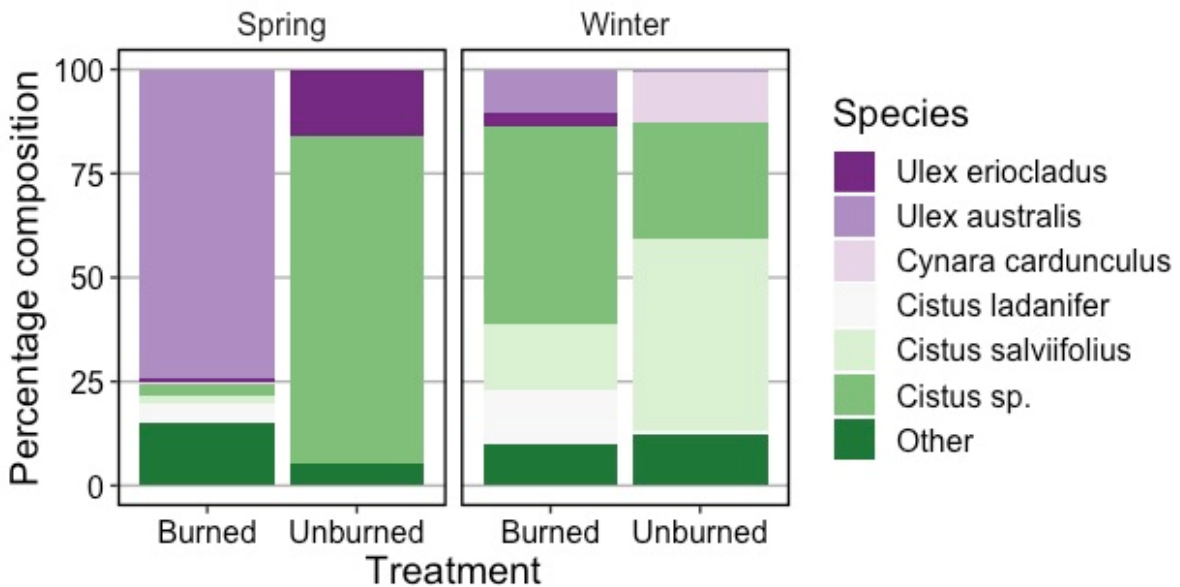


**Figure b.** Assemblage composition by families of pollen carried by *Apis mellifera* caught in burned and unburned plots of Serra-do-Caldeirão, Portugal, and across seasons. Families never comprising >7% of individuals in any combination of season and treatment are grouped as “Other”, and all other families are shown independently.





**Figure c.** Assemblage composition by families of pollen carried by *H. rufficolis* caught in burned and unburned plots of Serra-do-Caldeirão, Portugal, and across seasons. Families never comprising >7% of individuals in any combination of season and treatment are grouped as “Other”, and all other families are shown independently.



**Figure d.** Assemblage composition by families of pollen carried by *O. funesta* caught in burned and unburned plots of Serra-do-Caldeirão, Portugal, and across seasons. Families never comprising >7% of individuals in any combination of season and treatment are grouped as “Other”, and all other families are shown independently.