**Table S1.** Mean activity densities (ind./day) and ecological species traits of ground-dwelling macro-invertebrate communities from montane hay meadows in South Tyrol, Italy. The values represent means (± standard deviations) calculated from the sums of the single pitfall traps (i.e., four per plot, n = 12); for yearly values the two seasons were averaged (n = 24). Ecological species trait: rareness (rare, scattered, frequent); moisture requirement (xerophilous, mesophilous, hygrophilous, euryhygric); and ecological tolerance (i.e., habitat specificity; stenoecious, mesoecious, euryoecious). Red list status for South Tyrol is given (Gapp 1994 for Araneae; Kahlen 2018 for Coleoptera); due to missing and old data, in parenthesis additional Red List statuses from neighbouring region: Rote Liste der Weberknechte (Opiliones) Österreichs (Komposch 2009), Rote Liste und Gesamtartenliste der Spinnen (Arachnida: Araneae) Deutschlands (Blick et al. 2016).

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| **(A)** | **Red List status** | | **Rarity** | **Moisture requirement** | **Ecological tolerance** | **Extensive Hay Meadow (EH)** | | | | **Intensive Hay Meadow (IH)** | | | |
| STyrol | GER | **Spring** | **Autumn** | **Yearly Mean (± sd)** | | **Spring** | **Autumn** | **Yearly Mean (± sd)** | |
| **ARANEAE** |  |  |  |  |  | **5.763** | **1.655** | **3.709** | **(1.690)** | **9.043** | **2.644** | **5.843** | **(0.451)** |
| **Dysderidae** |  |  |  |  |  | **0.011** | **0.011** | **0.011** | **(0.019)** | **0.011** | **0.011** | **0.011** | **(0.010)** |
| *Dysdera ninnii* Canestrini, 1868 | NT | – | scatt | eury | eury | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Harpactea lepida* (C. L. Koch, 1838) | LC | (LC) | freq | eury | eury | *0.011* | *0.011* | *0.011* | *(0.019)* | *–* | *0.011* | *0.006* | *(0.010)* |
| **Linyphiidae** |  |  |  |  |  | **0.183** | **0.011** | **0.097** | **(0.085)** | **0.226** | **0.103** | **0.165** | **(0.081)** |
| *Agyneta affinis* (Kulczyński, 1898) | – | (NT) | scatt | eury | eury | *–* | *–* | *–* |  | *0.086* | *0.000* | *0.043* | *(0.074)* |
| *Bolyphantes kolosvaryi* (Caporiacco,1936) | LC | – | scatt | – | – | *0.011* | *0.011* | *0.011* | *(0.010)* | *–* | *–* | *–* |  |
| *Centromerita bicolor* (Blackwall, 1833) | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Centromerus cavernarum* (L. Koch, 1872) | LC | (LC) | scatt | eury | steno | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Ceratinella brevis* (Wider, 1834) | LC | (LC) | freq | eury | eury | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Dicymbium nigrum* (Blackwall, 1834) | LC | (LC) | freq | eury | eury | *0.075* | *–* | *0.038* | *(0.052)* | *0.022* | *–* | *0.011* | *(0.019)* |
| *Erigone atra* Blackwall, 1833 | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Erigone autumnalis* Emerton, 1882 | – | – | rare | – | – | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *0.011* | *0.006* | *(0.010)* |
| *Erigone dentipalpis* (Wider, 1834) | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *0.032* | *0.034* | *0.033* | *(0.017)* |
| *Mermessus trilobatus* (Emerton, 1882) | LC | – | freq | eury | eury | *0.032* | *–* | *0.016* | *(0.028)* | *–* | *–* | *–* |  |
| *Oedothorax apicatus* (Blackwall, 1850) | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *0.043* | *0.034* | *0.039* | *(0.026)* |
| *Pelecopsis parallela* (Wider, 1834) | LC | (LC) | scatt | eury | eury | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Saaristoa firma* (O. Pickard-Cambridge, 1906) | – | (LC) | rare | hygro | meso | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Stemonyphantes lineatus* (Linnaeus, 1758) | LC |  | scatt | hygro | meso | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Tenuiphantes mengei* (Kulczyński, 1887) | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Tiso vagans* (Blackwall, 1834) | LC | (LC) | freq | eury | eury | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Trichopternoides thorelli* (Westring, 1861) | – | (EN) | freq | eury | eury | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Walckenaeria mitrata* (Menge, 1868) | NT | (LC) | scatt | eury | eury | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| **Tetragnathidae:** *Pachygnatha degeeri* Sundevall, 1830 | LC | (LC) | freq | eury | eury | **0.677** | **0.011** | **0.344** | **(0.440)** | **3.978** | **0.138** | **2.058** | **(0.535)** |
| **Araneidae:** *Hypsosinga albovittata* (Westring, 1851) | LC | (NT) | scatt | eury | meso | **0.011** | **–** | **0.005** | **(0.009)** | **–** | **–** | **–** |  |

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| **(B)** | **Red List status** | | **Rarity** | **Moisture requirment** | **Ecological tolerance** | **Extensive Hay Meadow (EH)** | | | | **Intensive Hay Meadow (IH)** | | | |
| STyrol | GER | **Spring** | **Autumn** | **Yearly Mean (± sd)** | | **Spring** | **Autumn** | **Yearly Mean (± sd)** | |
| **Lycosidae** |  |  |  |  |  | **4.054** | **0.908** | **2.481** | **(1.660)** | **4.484** | **2.276** | **3.380** | **(0.954)** |
| *Alopecosa cuneata* (Clerck, 1757) | LC | (LC) | freq | xero | meso | *1.946* | *–* | *0.973* | *(1.616)* | *0.215* | *–* | *0.108* | *(0.186)* |
| *Alopecosa pulverulenta* (Clerck, 1757) | LC | (LC) | freq | eury | eury | *1.290* | *–* | *0.645* | *(0.503)* | *0.978* | *–* | *0.489* | *(0.429)* |
| *Alopecosa* sp. |  |  |  |  |  | *0.043* | *0.425* | *0.234* | *(0.213)* | *–* | *0.080* | *0.040* | *(0.026)* |
| *Arctosa figurata* (Simon, 1876) | VU | (VU) | rare | xero | meso | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| *Pardosa palustris* (Linnaeus, 1758) | LC | (LC) | freq | eury | eury | *–* | *0.046* | *0.023* | *(0.040)* | *0.301* | *0.356* | *0.329* | *(0.210)* |
| *Pardosa riparia* (C. L. Koch, 1833) | LC | (LC) | freq | eury | eury | *–* | *0.034* | *0.017* | *(0.030)* | *–* | *–* | *–* |  |
| *Pardosa* sp. |  |  |  |  |  | *0.215* | *0.333* | *0.274* | *(0.172)* | *2.591* | *1.563* | *2.077* | *(0.955)* |
| *Trochosa ruricola* (De Geer, 1778) | LC | (LC) | freq | eury | eury | *0.097* | *–* | *0.048* | *(0.070)* | *0.215* | *0.161* | *0.188* | *(0.171)* |
| *Trochosa terricola* Thorell, 1856 | LC | (LC) | freq | eury | eury | *0.452* | *0.057* | *0.255* | *(0.145)* | *0.172* | *–* | *0.086* | *(0.080)* |
| *Trochosa* sp. |  |  |  |  |  | *0.011* | *–* | *0.005* | *(0.009)* | *0.011* | *0.115* | *0.063* | *(0.055)* |
| **Miturgidae** |  |  |  |  |  | **0.011** | **0.023** | **0.017** | **(0.029)** | **–** | **–** | **–** |  |
| *Zora silvestris* Kulczyński, 1897 | NT | (LC) | rare | xero | meso | *0.011* | *0.011* | *0.011* | *(0.019)* | *–* | *–* | *–* |  |
| *Zora* sp. |  |  |  |  |  | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| **Agelenidae** |  |  |  |  |  | **0.043** | **0.080** | **0.062** | **(0.039) )** | **0.011** | **0.023** | **0.017** | **(0.017)** |
| *Eratigena agrestis* (Walckenaer, 1802) | NT | (LC) | scatt | xero | meso | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Inermocoelotes inermis* (L. Koch, 1855) | LC | (LC) | scatt | eury | eury | *0.011* | *0.069* | *0.040* | *(0.026)* | *–* | *0.011* | *0.006* | *(0.010)* |
| *Tegenaria ferruginea* (Panzer, 1804) | LC | (LC) | freq | eury | eury | *0.022* | *0.000* | *0.011* | *(0.009)* | *–* | *–* | *–* |  |
| *Tegenaria mirifica* Thaler, 1987 | – | – | rare | – | steno | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| *Tegenaria silvestris* L. Koch, 1872 | LC | (LC) | freq | eury | eury | *0.011* | *0.000* | *0.005* | *(0.009)* | *0.011* | *–* | *0.005* | *(0.009)* |
| **Hahniidae:** *Hahnia pusilla* C. L. Koch, 1841 | LC | (LC) | scatt | hygro | eury | **–** | **–** | **–** |  | **0.011** | **–** | **0.005** | **(0.009)** |
| **Amaurobiidae:** *Amaurobius obustus* L. Koch, 1868 | LC | – | freq | eury | eury | **–** | **–** | **–** |  | **0.022** | **–** | **0.011** | **(0.019)** |
| **Cheiracanthiidae:** *Cheiracanthium virescens* (Sundevall, 1833) | – | (LC) | rare | xero | steno | **–** | **–** | **–** |  | **0.011** | **–** | **0.005** | **(0.009)** |
| **Clubionidae:** *Clubiona* sp. |  |  |  |  |  | **0.011** | **0.023** | **0.017** | ***(*0.017)** | **–** | **–** | **–** |  |
| **Gnaphosidae** |  |  |  |  |  | **0.237** | **0.092** | **0.164** | ***(*0.134)** | **0.043** | **0.023** | **0.033** | **(0.001)** |
| *Drassodes cupreus* (Blackwall, 1834) | LC | (LC) | freq | eury | meso | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Drassodes lapidosus* (Walckenaer, 1802) | LC | (LC) | freq | xero | meso | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Drassodes pubescens* (Thorell, 1856) | LC | (LC) | freq | xero | meso | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Drassodes* sp. |  |  |  |  |  | *0.075* | *–* | *0.038* | *(0.041)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Drassyllus pusillus* (C. L. Koch, 1833) | LC | (LC) | scatt | eury | meso | *0.022* | *–* | *0.011* | *(0.019)* | *–* | *–* | *–* |  |
| *Haplodrassus* sp. |  |  |  |  |  | *0.011* | *–* | *0.005* | *(0.009)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Micaria fulgens* (Walckenaer, 1802) | LC | (LC) | scatt | xero | eury | *0.022* | *–* | *0.011* | *(0.019)* | *–* | *–* | *–* |  |
| *Zelotes latreillei* (Simon, 1878) | LC | (LC) | rare | eury | eury | *0.022* | *–* | *0.011* | *(0.019)* | *0.022* | *–* | *0.011* | *(0.009)* |
| *Zelotes petrensis* (C. L. Koch, 1839) | LC | (LC) | scatt | xero | eury | *0.022* | *0.046* | *0.034* | *(0.045)* | *–* | *0.023* | *0.011* | *(0.010)* |
| *Zelotes* sp. |  |  |  |  |  | *0.032* | *0.046* | *0.039* | *(0.043)* | *–* | *–* | *–* |  |

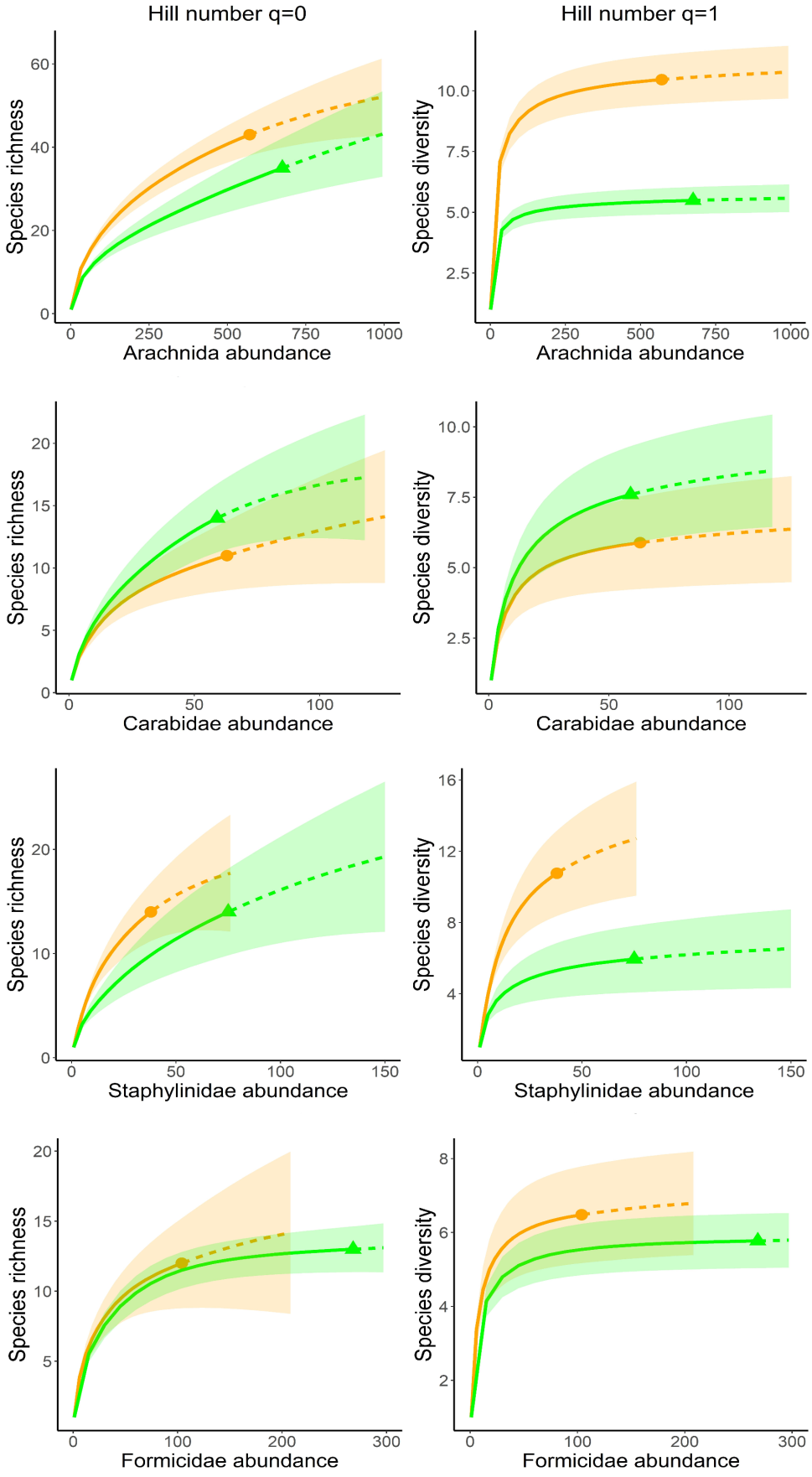
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| **(C)** | **Red List status** | | **Rarity** | **Moisture requirement** | **Ecological tolerance** | **Extensive Hay Meadow (EH)** | | | | **Intensive Hay Meadow (IH)** | | | |
| STyrol | GER | **Spring** | **Autumn** | **Yearly Mean (± sd)** | | **Spring** | **Autumn** | **Yearly Mean (± sd)** | |
| **Philodromidae** |  |  |  |  |  | **0.118** | **0.276** | **0.197** | ***(*0.130)** | **–** | **–** | **–** |  |
| *Thanatus formicinus* (Clerck, 1757) | NT | (NT) | scatt | xero | meso | *0.118* | *0.253* | *0.186* | *(0.135)* | *–* | *–* | *–* |  |
| *Thanatus* sp. |  |  |  |  |  | *–* | *0.023* | *0.011* | *(0.020)* | *–* | *–* | *–* |  |
| **Thomisidae** |  |  |  |  |  | **0.398** | **0.207** | **0.302** | ***(*0.089)** | **0.247** | **0.069** | **0.158** | **(0.058)** |
| *Ozyptila atomaria* (Panzer, 1801) | LC | (LC) | freq | eury | eury | *0.043* | *0.023* | *0.033* | *(0.033)* | *–* | *–* | *–* |  |
| *Ozyptila claveata* (Walckenaer, 1837) | – | (LC) | rare | xero | steno | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Ozyptila secreta* Thaler, 1987 | NT | – | rare | xero | steno | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Ozyptila* sp. |  |  |  |  |  | *–* | *0.023* | *0.011* | *(0.010)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Xysticus acerbus* Thorell, 1872 | NT | (LC) | rare | xero | – | *–* | *–* | *–* |  | *0.043* | *–* | *0.022* | *(0.019)* |
| *Xysticus bifasciatus* C. L. Koch, 1837 | LC | (LC) | scatt | xero | meso | *0.054* | *0.011* | *0.033* | *(0.029)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Xysticus cristatus* (Clerck, 1757) | LC | (LC) | freq | eury | eury | *0.097* | *0.023* | *0.060* | *(0.090)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Xysticus erraticus* (Blackwall, 1834) | LC | (LC) | scatt | xero | meso | *0.129* | *0.023* | *0.076* | *(0.117)* | *–* | *–* | *–* |  |
| *Xysticus kochi* Thorell, 1872 | – | (LC) | freq | eury | eury | *0.011* | *–* | *0.005* | *(0.009)* | *0.097* | *–* | *0.048* | *(0.016)* |
| *Xysticus* sp. |  |  |  |  |  | *0.054* | *0.103* | *0.079* | *(0.040)* | *0.075* | *0.057* | *0.066* | *(0.045)* |
| **Salticidae** |  |  |  |  |  | **0.011** | **0.011** | **0.011** | ***(*0.019)** | **–** | **–** | **–** |  |
| *Heliophanus* sp. |  |  |  |  |  | *0.011* | *0.000* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Phlegra fasciata* (Hahn, 1826) | LC | (LC) | freq | xero | meso | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
|  | **Red List status** | | **Rarity** | **Moisture requirement** | **Ecological tolerance** | **Extensive Hay Meadow (EH)** | | | | **Intensive Hay Meadow (IH)** | | | |
| STyrol | AUT | **Spring** | **Autumn** | **Yearly Mean (± sd)** | | **Spring** | **Autumn** | **Yearly Mean (± sd)** | |
| **OPILIONES** |  |  |  |  |  | **0.043** | **0.046** | **0.044** | ***(*0.049)** | **–** | **0.023** | **0.011** | **(0.010)** |
| **Nemastomatidae:** *Paranemastoma quadripunctatum* (Perty, 1833) | – | (NT) | scatt | hygro | steno | **0.022** | **0.000** | **0.011** | ***(*0.009)** | **–** | **0.000** | **–** |  |
| **Sclerosomatidae:** *Astrobunus helleri* (Ausserer, 1867) | – | (EN) | scatt | eury | steno | **–** | **–** | **–** |  | **–** | **0.011** | **0.006** | **(0.010)** |
| **Phalangiidae** |  |  |  |  |  | **0.022** | **0.046** | **0.034** | ***(*0.058)** | **–** | **0.011** | **0.006** | **(0.010)** |
| *Mitopius morio* (Fabricius, 1779) | – | (LC) | freq | eury | meso | *–* | *0.034* | *0.017* | *(0.030)* | *–* | *0.011* | *0.006* | *(0.010)* |
| *Phalangium opilio* Linnaeus, 1758 | – | (LC) | freq | eury | eury | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| *Platybunus* sp. |  |  |  |  |  | *0.022* | *–* | *0.011* | *(0.019)* | *–* | *–* | *–* |  |
| **CHILOPODA** |  |  |  |  |  | **–** | **–** | **–** |  | **0.022** | **–** | **0.011** | **(0.019)** |
| **DIPLOPODA** |  |  |  |  |  | **0.043** | **0.138** | **0.090** | **(0.059)** | **–** | **0.023** | **0.011** | **(0.020)** |
| **ISOPODA** |  |  |  |  |  | **0.086** | **0.011** | **0.049** | **(0.033)** | **0.280** | **0.184** | **0.232** | **(0.201)** |
| **CAELIFERA** |  |  |  |  |  | **1.656** | **0.046** | **0.851** | **(0.729)** | **0.172** | **–** | **0.086** | **(0.081)** |
| **ENSIFERA** |  |  |  |  |  | **0.376** | **0.011** | **0.194** | **(0.059)** | **0.527** | **0.011** | **0.269** | **(0.372)** |
| **DERMAPTERA** |  |  |  |  |  | **0.129** | **0.023** | **0.076** | **(0.118)** | **0.043** | **0.023** | **0.033** | **(0.043)** |

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| **(D)** | **Red List Status** | | **Rarity** | **Moisture requirement** | **Ecological tolerance** | **Extensive Hay Meadow (EH)** | | | | **Intensive Hay Meadow (IH)** | | | |
| STyrol | GER | **Spring** | **Autumn** | **Yearly Mean (± sd)** | | **Spring** | **Autumn** | **Yearly Mean (± sd)** | |
| **COLEOPTERA** |  |  |  |  |  | **0.593** | **0.621** | **0.607** | **(0.189)** | **1.345** | **1.678** | **1.511** | **(0.695)** |
| **Carabidae** |  |  |  |  |  | **0.442** | **0.299** | **0.371** | **(0.174)** | **0.452** | **0.425** | **0.439** | **(0.223)** |
| *Abax parallelepipedus* (Piller & Mitterpacher, 1783) | LC |  | scatt | hygro | eury | *–* | *0.034* | *0.017* | *(0.017)* | *–* | *–* | *–* |  |
| *Amara aenea* (DeGeer, 1774) | LC |  | freq | xero | eury | *0.011* | *–* | *0.005* | *(0.009)* | *0.054* | *–* | *0.027* | *(0.047)* |
| *Amara communis* (Panzer, 1796) | LC |  | scatt | hygro | eury | *0.022* | *–* | *0.011* | *(0.009)* | *–* | *–* | *–* |  |
| *Amara convexior* Stephens 1828 | LC |  | freq | xero | eury | *0.086* | *–* | *0.043* | *(0.037)* | *–* | *–* | *–* |  |
| *Amara lunicollis* Schiodte, 1837 | LC |  | scatt | xero | eury | *0.011* | *0.011* | *0.011* | *(0.010)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Amara nigricornis* C. G. Thomson 1857 | LC |  | scatt | – | steno | *0.011* | *0.011* | *0.011* | *(0.019)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Amara nitida* J. Sturm 1825 | LC |  | freq | – | eury | *0.032* | *–* | *0.016* | *(0.000)* | *–* | *–* | *–* |  |
| *Amara* sp. |  |  |  |  |  | *0.022* | *–* | *0.011* | *(0.009)* | *–* | *–* | *–* |  |
| *Bembidion lampros* (Herbst 1784) | LC |  | freq | – | eury | *0.011* | *–* | *0.005* | *(0.009)* | *0.011* | *0.103* | *0.057* | *(0.099)* |
| *Bembidion properans* (Stephens 1828) | LC |  | scatt | hygro | eury | *–* | *–* | *–* |  | *0.022* | *–* | *0.011* | *(0.019)* |
| *Calathus erratus* (C. R. Sahlberg, 1827) | LC |  | freq | xero | eury | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| *Calathus fuscipes* (Goeze, 1777) | LC |  | freq | xero | eury | *–* | *0.057* | *0.029* | *(0.036)* | *–* | *0.276* | *0.138* | *(0.062)* |
| *Calathus melanocephalus* (Linnaeus, 1758) | LC |  | freq | xero | eury | *–* | *0.046* | *0.023* | *(0.020)* | *–* | *–* | *–* |  |
| *Carabus convexus* Herbst, 1786 | LC |  | scatt | xero | eury | *0.023* | *0.000* | *0.011* | *(0.020)* | *–* | *–* | *–* |  |
| *Poecilus cupreus* (Linnaeus, 1758) | LC |  | freq | – | eury | *0.075* | *0.011* | *0.043* | *(0.034)* | *0.215* | *0.011* | *0.113* | *(0.058)* |
| *Poecilus versicolor* (Sturm, 1824) | LC |  | freq | – | eury | *0.022* | *0.034* | *0.028* | *(0.035)* | *0.108* | *0.023* | *0.065* | *(0.043)* |
| *Pterostichus burmeisteri* Heer, 1837 | LC |  | freq | hygro | eury | *0.118* | *0.080* | *0.099* | *(0.059)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Pterostichus melanarius* (Illiger, 1798) | LC |  | freq | hygro | eury | *–* | *–* | *–* |  | *0.011* | *–* | *0.006* | *(0.010)* |
| *Pterostichus niger* (Schaller, 1783) | LC |  | freq | hygro | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| **Staphylinidae** |  |  |  |  |  | **0.151** | **0.276** | **0.213** | **(0.103)** | **0.602** | **0.230** | **0.416** | **(0.196)** |
| *Amischa analis* (Gravenhorst, 1802) | LC |  | freq | – | eury | *–* | *–* | *–* |  | *0.011* | *0.011* | *0.011* | *(0.010)* |
| *Athetini* sp. |  |  |  |  |  | *–* | *–* | *–* |  | *0.011* | *0.000* | *0.005* | *(0.009)* |
| *Dinothenarus fossor* (Scopoli, 1771) | LC |  | scatt | xero | eury | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *–* | *–* |  |
| *Gabrius toxotes* Joy, 1913 | LC |  | – | – | – | *0.032* | *–* | *0.016* | *(0.016)* | *–* | *–* | *–* |  |
| *Ischnosoma splendidum* (Gravenhorst, 1806) | LC |  | scatt | hygro | eury | *0.011* | *0.011* | *0.011* | *(0.010)* | *–* | *–* | *–* |  |
| *Ocypus fulvipennis* Erichson, 1840 | LC |  | scatt | – | eury | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Ocypus olens* (O. F. Müller, 1764) | LC |  | rare | hygro | eury | *–* | *0.057* | *0.029* | *(0.050)* | *–* | *0.011* | *0.006* | *(0.010)* |
| *Ocypus picipennis* (Fabricius, 1792) | LC |  | scatt | xero | eury | *0.011* | *0.046* | *0.028* | *(0.049)* | *–* | *–* | *–* |  |
| *Philonthus carbonarius* (Gravenhorst, 1802) | LC |  | freq | – | eury | *–* | *0.023* | *0.011* | *(0.020)* | *0.011* | *0.011* | *0.011* | *(0.019)* |
| *Philonthus cognatus* Stephens, 1832 | LC |  | scatt | hygro | eury | *0.011* | *–* | *0.005* | *(0.009)* | *0.215* | *0.011* | *0.113* | *(0.048)* |
| *Platydracus stercorarius fuscofermoratus* (G. Müller, 1923) | LC |  | scatt | xero | eury | *–* | *0.023* | *0.011* | *(0.020)* | *–* | *–* | *–* |  |
| *Sepedophilus nigripennis* (Stephens, 1832) | LC |  | scatt | – | – | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Staphylinus caesareus* Cederhjelm, 1798 | LC |  | freq | hygro | eury | *0.054* | *0.011* | *0.033* | *(0.001)* | *0.043* | *–* | *0.022* | *(0.025)* |
| *Staphylinus dimidiaticornis* Gemminger, 1851 | LC |  | scatt | – | eury | *–* | *0.080* | *0.040* | *(0.070)* | *0.226* | *0.115* | *0.170* | *(0.144)* |
| *Stenus clavicornis* (Scopoli, 1763) | LC |  | freq | xero | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Stenus nanus* Stephens, 1833 | LC |  | scatt | xero | eury | *–* | *–* | *–* |  | *0.032* | *0.023* | *0.028* | *(0.019)* |
| *Stenus* sp. |  |  |  |  |  | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Tachyporus nitidulus* (Fabricius, 1781) | LC |  | freq | – | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Tachyporus pusillus* Gravenhorst, 1806 | LC |  | freq | – | – | *0.011* | *–* | *0.005* | *(0.009)* | *–* | *–* | *–* |  |
| *Tachyporus* sp. |  |  |  |  |  | *–* | *0.011* | *0.006* | *(0.010)* | *0.011* | *–* | *0.005* | *(0.009)* |
| *Xantholinus audrasi* Coiffait, 1956 | new! |  | rare | xero | steno | *–* | *–* | *–* |  | *0.011* | *–* | *0.005* | *(0.009)* |
| *Xantholinus linearis* (A. G. Olivier, 1795) | LC |  | freq | xero | eury | *–* | *–* | *–* |  | *–* | *0.011* | *0.006* | *(0.010)* |
| *Xantholinus longiventris* Heer, 1839 | LC |  | rare | hygro | eury | *–* | *–* | *–* |  | *0.032* | *–* | *0.016* | *(0.016)* |
| **Curculionidae** |  |  |  |  |  | ***–*** | **0.046** | **0.023** | **(0.040)** | **0.290** | **1.023** | **0.657** | **(0.355)** |
| **FORMICIDAE** |  |  |  |  |  | **0.290** | **0.885** | **0.588** | **(0.425)** | **1.172** | **1.828** | **1.500** | **(1.115)** |
| *Camponotus ligniperda* (Latreille, 1802) | – | (LC) | freq | xero | meso | *–* | *0.023* | *0.011* | *(0.020)* | *–* | *–* | *–* |  |
| *Formica cunicularia* Latreille, 1798 | – | (LC) | freq | xero | meso | *0.032* | *0.241* | *0.137* | *(0.237)* | *–* | *0.046* | *0.023* | *(0.026)* |
| *Formica fusca* Linnaeus, 1758 | – | (LC) | freq | xero | meso | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *0.046* | *0.023* | *(0.040)* |
| *Formica pratensis* Retzius, 1783 | – | (NT) | scatt | xero | steno | *–* | *–* | *–* |  | *0.011* | *0.057* | *0.034* | *(0.059)* |
| *Formica rufibarbis* Fabricius, 1793 | – | (LC) | freq | xero | meso | *–* | *0.195* | *0.098* | *(0.169)* | *–* | *0.092* | *0.046* | *(0.065)* |
| *Formica sanguinea* Latreille, 1798 | – | (LC) | freq | xero | meso | *0.054* | *0.023* | *0.038* | *(0.042)* | *–* | *–* | *–* |  |
| *Lasius flavus* (Fabricius, 1782) | – | (LC) | freq | meso | eury | *–* | *0.011* | *0.006* | *(0.010)* | *0.011* | *0.046* | *0.028* | *(0.026)* |
| *Lasius niger* (Linnaeus, 1758) | – | (LC) | freq | meso | eury | *–* | *–* | *–* |  | *0.247* | *0.057* | *0.152* | *(0.088)* |
| *Lasius psammophilus* Seifert, 1992 | – | (NT) | freq | xero | steno | *0.043* | *0.011* | *0.027* | *(0.047)* | *0.419* | *0.402* | *0.411* | *(0.474)* |
| *Myrmecina graminicola* (Latreille, 1802) | – | (NT) | freq | xero | eury | *–* | *–* | *–* |  | *0.022* | *–* | *0.011* | *(0.019)* |
| *Myrmica lobicornis* Nylander, 1846 | – | (VU) | scatt | xero | steno | *0.022* | *0.011* | *0.016* | *(0.017)* | *0.032* | *0.149* | *0.091* | *(0.099)* |
| *Myrmica lonae* Finzi, 1926 | – | (VU) | scatt | hygro | eury | *0.022* | *0.023* | *0.022* | *(0.039)* | *0.032* | *0.046* | *0.039* | *(0.020)* |
| *Myrmica rubra* (Linnaeus, 1758) | – | (LC) | scatt | hygro | eury | *–* | *–* | *–* |  | *–* | *0.069* | *0.034* | *(0.060)* |
| *Myrmica scabrinodis* Nylander, 1846 | – | (NT) | freq | meso | eury | *0.086* | *0.322* | *0.204* | *(0.223)* | *0.398* | *0.805* | *0.601* | *(0.756)* |
| *Myrmica vandeli* Bondroit, 1920 | – | (EN) | scatt | hygro | steno | *–* | *0.011* | *0.006* | *(0.010)* | *–* | *0.011* | *0.006* | *(0.010)* |
| *Tapinoma subboreale* Seifert, 2012 | – | (VU) | freq | xero | meso | *0.032* | *–* | *0.016* | *(0.028)* | *–* | *–* | *–* |  |

Diagram

Description automatically generated

**Figure S1.** The mean (and 95% confidence interval) activity density as individuals per day, species richness and exponential Shannon diversity of selected predatory ground-dwelling arthropods (Arachnida, Carabidae, Staphylinidae, and Formicidae) from extensively and intensively managed montane hay meadows in South Tyrol, Italy. Significant effect of management was detected for Carabidae for species richness (LMM: Chi² = 4.39 p = 0.037) and diversity (LMM: Chi² = 5.77 p = 0.016) and Staphylinidae for species richness (LMM: Chi² = 5.01 p = 0.024) and species diversity (LMM: Chi² = 4.62 p = 0.032).



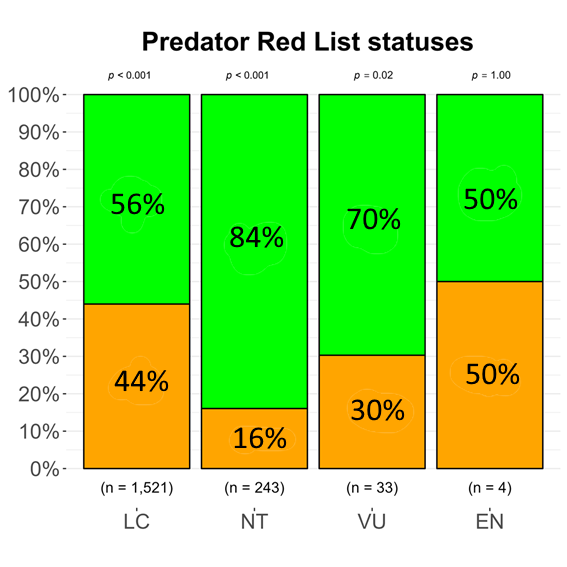
**Figure S2.** Abundance-based accumulation curves for selected predatory ground-dwelling arthropods (Arachnida, Carabidae, Staphylinidae and Formicidae) based on Hill numbers N0 and N1 confronting extensively and intensively managed montane hay meadows in South Tyrol, Italy.

Chart, scatter chart

Description automatically generated

**Figure S3.** Non-metric multidimensional scaling (NMDS) of selected predatory ground-dwelling arthropods (Arachnida, Carabidae, Staphylinidae, and Formicidae) confronting extensively and intensively managed montane hay meadows in South Tyrol, Italy. Each data point represents one pitfall trap. The spider web centres are the weighted centroids of each management type.

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**Figure S4.** Proportions and *χ2*-test results for the Red List statuses of ground-dwelling predatory arthropods (Arachnida, Carabidae, Staphylinidae, Formicidae) from extensively and intensively managed hay meadows in South Tyrol, Italy.