

Table S1. Detailed of the three specimens identified with barcoding. The Accession Number is from GenBank where the nucleotide sequences have been deposited. For more detail about the Collection Locality see Tab. 1.

Species	Sex	Collection Locality	Date	Altitude	Accession number
<i>Psithyrus bohemicus</i>	Female	Soladen VFB	13.ix.2020	956	OM836488
<i>Bombus wurflenii</i>	Female	Vette Grandi VFH	13.ix.2020	2130	OM836489
<i>Bombus soroeensis</i>	Female	Soladen VFB	13.ix.2020	956	OM836490

Table S2. Correlation matrix between predicting variables. The table reports the P value of Sperman linear correlation. In bold the statistically significant correlation ($P < 0.05$). abbreviation: Alt = Altitude; Grass = Percentage of grassland habitat; N Sp Ent = number of plant species with entomophilic pollination; N Sp Veg = number of plant species; Scree = percentage of scree area; Scrubs = percentage of scrubs habitat; Temp = temperature; Wood = Percentage of wood habitat. See text for a more detailed description of the predicting variables.

	Temp	Wood	Grass	Scree	Scrubs	Slope	N Sp Veg	N Sp Ent
Alt	0.0000	0.2243	0.9235	0.0275	0.8062	0.0651	0.9368	0.4421
Temp		0.2048	0.8109	0.1227	0.9136	0.1245	0.8847	0.7436
Wood			0.0342	0.2896	0.8214	0.3049	0.7919	0.7222
Grass				0.2038	0.0475	0.6612	0.7047	0.8466
Scree					0.4246	0.2696	0.2042	0.8121
Scrubs						0.0569	0.2042	0.0732
Slope							0.3036	0.0305
N Sp Veg								0.0002

Table S3. List of Syrphidae species collected by pan traps, with the main ecological categories used in the analysis. Abbreviations: Fol. = Foliage; Sap. = Saprophagous; Xylosap. = Xylosaprophagous. For Adult Dimension the following categories have been used: small = 6-9 cm; medium = 9.5-12 cm, large > 12 cm.

Species	Larvae Diet	Larvae Microhabitat	Adult Dimension
<i>Brachypalpoides lentus</i> (Meigen, 1822)	Xylosap.	Wood	Large
<i>Brachypalpus chrysites</i> Egger, 1859	Xylosap.	Wood	Large
<i>Cheilosia aerea</i> Dufour, 1848	Phytophagous	Herb, Root	Small
<i>Cheilosia canicularis</i> (Panzer, 1801)	Phytophagous	Herb, Root	Large
<i>Cheilosia carbonaria</i> Egger, 1860	Phytophagous	Herb, Root	Medium
<i>Cheilosia derasa</i> Loew, 1857	Phytophagous	Herb, Root	Small
<i>Cheilosia gagatea</i> Loew, 1857	Phytophagous	Herb	Medium
<i>Cheilosia grisella</i> Becker, 1894	Phytophagous	Herb, Root	Small
<i>Cheilosia illustrata</i> (Harris, 1776)	Phytophagous	Herb, Root	Medium
<i>Cheilosia impressa</i> Loew, 1840	Phytophagous	Herb, Root	Small

<i>Cheilosia laeviseta</i> Claussen, 1987	Phytophagous	Herb, Root	Small
<i>Cheilosia laticornis</i> Rondani, 1857	Phytophagous	Herb, Root	Medium
<i>Cheilosia pagana</i> (Meigen, 1822)	Phytophagous	Herb, Root	Small
<i>Cheilosia personata</i> Loew, 1857	Phytophagous	Herb	Medium
<i>Cheilosia rhynchops</i> Egger, 1860	Phytophagous	Herb, Root	Medium
<i>Cheilosia vernalis</i> (Fallén, 1817)	Phytophagous	Herb, Root	Small
<i>Chrysotoxum bicinctum</i> (Linnaeus, 1758)	Zoophagous	Root	Medium
<i>Chrysotoxum elegans</i> Loew, 1841	Zoophagous	Root	Medium
<i>Chrysotoxum fasciatum</i> (Müller, 1764)	Zoophagous	Root	Medium
<i>Dasysyrphus albostrigatus</i> (Fallén, 1817)	Zoophagous	Tree Fol.	Medium
<i>Epistrophe grossulariae</i> (Meigen, 1822)	Zoophagous	Herb	Medium
<i>Episyrphus balteatus</i> (De Geer, 1776)	Zoophagous	Herb, Tree Fol.	Medium
<i>Eristalis arbustorum</i> (Linnaeus, 1758)	Water Sap.	Water	Medium
<i>Eristalis interrupta</i> (Poda, 1761)	Water Sap.	Water	Medium
<i>Eristalis pertinax</i> (Scopoli, 1763)	Water Sap.	Water	Large
<i>Eristalis similis</i> (Fallén, 1817)	Water Sap.	Water	Large
<i>Eristalis tenax</i> (Linnaeus, 1758)	Water Sap.	Water	Large
<i>Eumerus alpinus</i> Rondani, 1857	Phytophagous	Herb, Root	Medium
<i>Eumerus ornatus</i> Meigen, 1822	Phytophagous	Herb, Root	Small
<i>Eumerus sinuatus</i> Loew, 1855	Phytophagous	Herb, Root	Medium
<i>Eupeodes corollae</i> (Fabricius, 1794)	Zoophagous	Tree Fol.	Small
<i>Eupeodes lapponicus</i> (Zetterstedt, 1838)	Zoophagous	Tree Fol.	Medium
<i>Eupeodes luniger</i> (Meigen, 1822)	Zoophagous	Tree Fol.	Medium
<i>Ferdinandea cuprea</i> (Scopoli, 1763)	Xylosap.	Wood	Medium
<i>Melanostoma mellinum</i> (Linnaeus, 1758)	Zoophagous	Herb, Root	Small
<i>Meliscaeva auricollis</i> (Meigen, 1822)	Zoophagous	Tree Fol.	Medium
<i>Meliscaeva cinctella</i> (Zetterstedt, 1843)	Zoophagous	Herb, Root	Medium
<i>Merodon aeneus</i> Meigen, 1822	Phytophagous	Herb, Root	Small
<i>Merodon armipes</i> Rondani, 1843	Phytophagous	Herb, Root	Medium
<i>Merodon cinereus</i> (Fabricius, 1794)	Phytophagous	Herb, Root	Medium
<i>Merodon constans</i> (Rossi, 1794)	Phytophagous	Herb, Root	Medium
<i>Merodon equestris</i> (Fabricius, 1794)	Phytophagous	Herb, Root	Large
<i>Merodon rufus</i> Meigen, 1838	Phytophagous	Herb, Root	Medium
<i>Microdon devius</i> (Linnaeus, 1761)	Zoophagous	Root	Medium
<i>Myathropea florea</i> (Linnaeus, 1758)	Water Sap.	Water	Large
<i>Paragus pecchiolii</i> Rondani, 1857	Zoophagous	Herb	Small
<i>Pipiza noctiluca</i> (Linnaeus, 1758)	Zoophagous	Herb	Small
<i>Platycheirus albimanus</i> (Fabricius, 1781)	Zoophagous	Herb, Tree Fol.	Small
<i>Platycheirus manicatus</i> (Meigen, 1822)	Zoophagous	Herb	Small
<i>Platycheirus nielsenii</i> Vockeroth, 1990	Zoophagous	Herb, Tree Fol.	Small
<i>Platycheirus scutatus</i> (Meigen, 1822)	Zoophagous	Herb, Tree Fol.	Small
<i>Rhingia campestris</i> Meigen, 1822	Water Sap.	Water	Medium

<i>Scaeva dignota</i> (Rondani, 1857)	Zoophagous	Herb, Tree Fol.	Large
<i>Scaeva pyrastris</i> (Linnaeus, 1758)	Zoophagous	Herb, Tree Fol.	Large
<i>Sphaerophoria fatarum</i> Goeldlin de Tiefenau, 1974	Zoophagous	Herb	Small
<i>Sphaerophoria interrupta</i> (Fabricius, 1805)	Zoophagous	Herb	Small
<i>Sphaerophoria scripta</i> (Linnaeus, 1758)	Zoophagous	Herb	Small
<i>Sphaerophoria taeniata</i> (Meigen, 1822)	Zoophagous	Herb	Small
<i>Syrphus ribesii</i> (Linnaeus, 1758)	Zoophagous	Herb	Medium
<i>Syrphus torvus</i> Osten-Sacken, 1875	Zoophagous	Herb	Medium
<i>Syrphus vitripennis</i> Meigen, 1822	Zoophagous	Herb	Medium
<i>Trichopsomyia joratensis</i> (Goeldlin de Tiefenau, 1997)	Zoophagous	Herb	Small
<i>Volucella bombylans</i> (Linnaeus, 1758)	Zoophagous	Root	Large
<i>Volucella pellucens</i> (Linnaeus, 1758)	-	-	Large
<i>Xylota ignava</i> (Panzer, 1798)	Xylosap.	Wood	Large
<i>Xylota jakutorum</i> Bagatshanova, 1980	Xylosap.	Wood	Medium
<i>Xylota segnis</i> (Linnaeus, 1758)	Xylosap.	Wood	Medium
<i>Xylota sylvarum</i> (Linnaeus, 1758)	Xylosap.	Wood	Large

Table S4. List of Anthophila species collected by pan traps, with the main ecological categories used in the analysis. Abbreviations: Soc. = Social; Veg. = Vegetation. For Adult Dimension the following categories have been used: small = 5-10 cm; medium = 10.5-15.5 cm; large > 15.5 cm.

<i>Specie</i>	Family	Nest Position	Diet Breath	Adult Dimension
<i>Andrena aeneiventris</i> Morawitz, 1872	Andrenidae	Soil	Oligolectic	Small
<i>Andrena bicolor</i> Fabricius, 1775	Andrenidae	Soil	Polilectic	Small
<i>Andrena cinerea</i> Brullé, 1832	Andrenidae	Soil	Polilectic	Small
<i>Andrena dorsata</i> (Kirby, 1802)	Andrenidae	Soil	Polilectic	Small
<i>Andrena fulvago</i> (Christ, 1791)	Andrenidae	Soil	Polilectic	Medium
<i>Andrena hattorfiana</i> (Fabricius, 1775)	Andrenidae	Soil	Oligolectis	Medium
<i>Andrena nana</i> (Kirby, 1802)	Andrenidae	Soil	Polilectic	Small
<i>Andrena ovatula</i> (Kirby, 1802)	Andrenidae	Soil	Polilectic	Small
<i>Andrena similis</i> Smith, 1849	Andrenidae	Soil	Oligolectic	Medium
<i>Andrena ventralis</i> Imhoff, 1832	Andrenidae	Soil	Oligolectic	Small
<i>Andrena vulpecula</i> Kriechbaumer, 1873	Andrenidae	Soil	Oligolectic	Small
<i>Andrena wilkella</i> (Kirby, 1802)	Andrenidae	Soil	Oligolectic	Medium
<i>Apis mellifera</i> Linnaeus, 1758	Apidae	-	Polilectic	Medium
<i>Bombus hortorum</i> (Linnaeus, 1761)	Apidae	Soil	Polilectic	Medium
<i>Bombus inexpectatus</i> (Tkalcú, 1963)	Apidae	Soil	Soc. Parasite	Large
<i>Bombus jonellus</i> (Kirby, 1802)	Apidae	Soil	Oligolectic	Medium
<i>Bombus lapidarius</i> (Linnaeus, 1758)	Apidae	Soil	Polilectic	Medium
<i>Bombus lucorum</i> (Linnaeus, 1761)	Apidae	Soil	Polilectic	Large
<i>Bombus pascuorum</i> (Scopoli, 1763)	Apidae	Soil	Polilectic	Medium

<i>Bombus pratorum</i> (Linnaeus, 1761)	Apidae	Soil	Polilectic	Medium
<i>Bombus ruderarius</i> (Müller, 1776)	Apidae	Soil	Polilectic	Large
<i>Bombus soroeensis</i> (Fabricius, 1776)	Apidae	Soil	Soc. Parasite	Medium
<i>Bombus</i> sp 2	Apidae	-	-	-
<i>Bombus terrestris</i> (Linnaeus, 1758)	Apidae	Soil	Polilectic	Medium
<i>Bombus wurfleini</i> Radoszkowski, 1859	Apidae	Soil	Polilectic	Medium
<i>Eucera nigrifacies</i> Lepeletier, 1841	Apidae	Veg.	Polilectic	Medium
<i>Halictus sajo</i> Blüthgen, 1923	Halictidae	Soil	Polilectic	Small
<i>Halictus scabiosae</i> (Rossi, 1790)	Halictidae	Soil	Polilectic	Medium
<i>Halictus sexcintus</i> (Fabricius, 1775)	Halictidae	Soil	Polilectic	Medium
<i>Halictus tumulorum</i> (Linnaeus, 1758)	Halictidae	Soil	Polilectic	Small
<i>Hoplitis claviventris</i> (Thompson, 1872)	Megachilidae	Veg.	Polilectic	Small
<i>Hylaeus brevicornis</i> Nylander, 1852	Colletidae	Veg.	Polilectic	Small
<i>Hylaeus communis</i> Nylander, 1852	Colletidae	Veg.	Polilectic	Small
<i>Hylaeus glacialis</i> Morawitz, 1872	Colletidae	Veg.	-	Small
<i>Hylaeus hyalinatus</i> Smith, 1842	Colletidae	Holes	Polilectic	Small
<i>Lasioglossum albipes</i> (Fabricius, 1781)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum calceatum</i> (Scopoli, 1763)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum fulvicorne</i> (Kirby, 1802)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum laevigatum</i> (Kirby, 1802)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum laticeps</i> (Schenck, 1868)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum malachurum</i> (Kirby, 1802)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum nitidulum</i> (Fabricius, 1804)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum pauxillum</i> (Schenck, 1853)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum punctatissimum</i> (Schenck, 1853)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum subhirtum</i> (Lepeletier, 1841)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum truncaticolle</i> (Morawitz, 1877)	Halictidae	-	-	-
<i>Lasioglossum villosulum</i> (Kirby, 1802)	Halictidae	Soil	Polilectic	Small
<i>Lasioglossum zonulum</i> (Smith, 1848)	Halictidae	Soil	Polilectic	Small
<i>Megachile circumcincta</i> Kirby, 1802	Megachilidae	Soil, Veg.	Polilectic	Medium
<i>Megachile lagopoda</i> (Linnaeus, 1761)	Megachilidae	Soil	Polilectic	Medium
<i>Megachile pilicrus</i> Morawitz, 1877	Megachilidae	Soil	Polilectic	Medium
<i>Nomada alboguttata</i> Herrich-Schäffer, 1839	Apidae	Soil	Soc. Parasite	Small
<i>Osmia aurulenta</i> Panzer, 1799	Megachilidae	Soil, Holes	Polilectic	Medium
<i>Osmia bicolor</i> (Schrank, 1781)	Megachilidae	Holes	Polilectic	Small
<i>Osmia caerulea</i> (Linnaeus, 1758)	Megachilidae	Veg., Holes	Polilectic	Small
<i>Osmia cerinthidis</i> Morawitz, 1876	Megachilidae	Soil	Oligolectic	Medium
<i>Osmia emarginata</i> Lepeletier, 1841	Megachilidae	Holes	Polilectic	Medium
<i>Osmia leaiana</i> (Kirby, 1802)	Megachilidae	Veg., Holes	Oligolectic	Small

<i>Osmia mustelina</i> Gerstaecker, 1869	Megachilidae	Holes	Poligolectic	Small
<i>Psithyrus campestris</i> (Panzer, 1801)	Apidae	Soil	Soc. Parasite	Large
<i>Psithyrus</i> cfr <i>bohemicus</i> (Seidl, 1838)	Apidae	Soil	Soc. Parasite	Large
<i>Psithyrus maxillosus</i> (Klug, 1817)	Apidae	Soil	Soc. Parasite	Large
<i>Psithyrus rupestris</i> (Fabricius, 1793)	Apidae	Soil	Soc. Parasite	Large
<i>Psithyrus sylvestris</i> (Lepeletier, 1832)	Apidae	Soil	Soc. Parasite	Medium
<i>Psithyrus vestalis</i> (Geoffroy, 1785)	Apidae	Soil	Soc. Parasite	Large
<i>Tetraloniella salicariae</i> (Lepeletier, 1841)	Apidae	Veg.	Oligolectic	Small
<i>Xylocopa violacea</i> (Linnaeus, 1758)	Apidae	Veg.	Polilectic	Large