Supplementary Material D:

SPECIES DIVERSITY AND QUANTITY OF INVERTEBRATE COMMUNITIES IN LANDSCAPE WITH PRESENT HISTORICAL AGRICULTURAL LANDFORMS

The study site Milešov was located approximately 2 km NW of Velemín village in the central part of the České Středohoří Mts, NW of Czechia. Two groups of invertebrates, ground beetles (Coleoptera: Carabidae) and spiders (Araneae), were investigated to assess the ecological importance of corridors with grown woody vegetation, which are historical agricultural landforms in rural landscapes. The sampling of spiders and ground beetles was carried out throughout the vegetation season in 2015 (from April to October). The material was obtained using pitfall traps, a small plastic container (approximately 9 cm in diameter and 12.5 cm deep, 500 ml volume) sunk into the ground with its rim flush with the soil surface. The pitfall traps were filled with a fixing liquid of 4% formaldehyde. In total, 37 pitfall traps in 3 types of habitats were exposed to assess the difference in species composition (18 traps in the agricultural landform, 10 traps in surrounding meadows, and 9 traps in adjacent forests) (see Figure D.1 for their spatial configuration within the site). They were installed at a minimum distance of 10 m among themselves in order to avoid diminishing their influence. The collected material was determined at the species level according to standard identification keys: Hůrka [87] for ground beetles and Nentwig et al. [88] for spiders. Only in the same cases of juvenile spider, the material was determined at the family level. The actual nomenclature for spiders is specified by Nentwig et al. [88], and the nomenclature for ground beetles was used according to Löbl et Smetana [89]. Through the sampling, a list of species present in different habitats and their quantities could be generated (see Table D.1 for spiders and Table D.2 for ground beetles).

Figure SD.1 Location of sampling points within the study site, Milešov in the České Středohoří Mts. (orthophotomap 2019 © ČUZK)

Table SD.1 Species and their quantity within studied habitats for spiders (Araneae)

SPECIES (or higher taxon level)	Description	Family	HABITAT		
			forest	*grassland*	*HAL*
Abacoproeces saltuum	(L. Koch, 1872)	Linyphiidae	0	1	1
Agroeca brunnea	(Blackwall, 1833)	Liocranidae	0	1	1
Agyneta affinis	(Kulczyński, 1898)	Linyphiidae	3	2	0
Agyneta saxatilis	(Blackwall, 1844)	Linyphiidae	1	0	4
Alopecosa pulverulenta	(Clerck, 1757)	Lycosidae	5	0	1
Alopecosa trabalis	(Clerck, 1757)	Lycosidae	1	0	1
Anyphaena accentuata	(Walckenaer, 1802)	Anyphaenidae	1	0	0
Araniella opisthographa	(Kulczyński, 1905)	Araneidae	0	1	0
Argenna subnigra	(O. P.-Cambridge, 1861)	Dictynidae	1	0	0
Bathyphantes gracilis	(Blackwall, 1841)	Linyphiidae	0	0	1
Aulonia albimana	(Walckenaer, 1805)	Lycosidae	2	0	0

SPECIES (or higher taxon level)	Description	Family	HABITAT		
			forest	*grassland*	*HAL*
Bathyphantes nigrinus	(Westring, 1851)	Linyphiidae	1	0	4
Callobius claustrarius	(Hahn, 1833)	Amaurobiidae	0	3	7
Ceratinella brevis	(Wider, 1834)	Linyphiidae	0	4	14
Clubiona comta	(C. L. Koch, 1839)	Clubionidae	0	0	16
Clubiona pallidula	(Clerck, 1757)	Clubionidae	0	1	0
Clubiona reclusa	(O. P.-Cambridge, 1863)	Clubionidae	0	1	1
Clubiona terrestris	(Westring, 1851	Clubionidae	1	3	19
Coelotes terrestris	(Wider, 1834)	Agelenidae	0	26	0
Diplocephalus latifrons	(O. P.-Cambridge, 1863)	Linyphiidae	0	0	1
Diplocephalus picinus	(Blackwall, 1841)	Linyphiidae	8	115	138
Diplostyla concolor	(Wider, 1834)	Linyphiidae	2	3	4
Dipoena melanogaster	(C. L. Koch, 1837)	Theridiidae	0	0	1
Drassodes pubescens	(Thorell, 1856)	Gnaphosidae	0	0	1
Drassyllus lutetianus	(L. Koch, 1866)	Gnaphosidae	2	0	1
Drassyllus praeficus	(L. Koch, 1866)	Gnaphosidae	2	0	0
Drassyllus pusillus	(C. L. Koch, 1833)	Gnaphosidae	1	0	1
Dysdera erythrina	(Walckenaer, 1802)	Dysderidae	0	1	18
Enoplognatha ovata	(Clerck, 1757)	Theridiidae	0	2	0
Enoplognatha thoracica	(Hahn, 1833)	Theridiidae	0	5	1
Entelecara acuminata	(Wider, 1834)	Linyphiidae	0	0	1
Erigone atra	(Blackwall, 1833)	Linyphiidae	0	1	0
Erigone dentipalpis	(Wider, 1834)	Linyphiidae	4	0	3
Erigonella hiemalis	(Blackwall, 1841)	Linyphiidae	1	3	4
Euophrys frontalis	(Walckenaer, 1802)	Salticidae	1	0	0
Euryopis flavomaculata	(C. L. Koch, 1836)	Theridiidae	2	0	2
Gongylidium rufipes	(Linné, 1758)	Linyphiidae	0	2	7
Haplodrassus silvestris	(Blackwall, 1833)	Gnaphosidae	0	0	1
Harpactea hombergi	(Scopoli, 1763)	Dysderidae	2	0	4
Harpactea rubicunda	(C. L. Koch, 1838)	Dysderidae	0	0	2
Histopona torpida	(C. L. Koch, 1834)	Agelenidae	2	8	55
Lathys humilis	(Blackwall, 1855)	Dictynidae	0	0	1
Linyphia hortensis	(Sundevall, 183)0	Linyphiidae	1	1	0
Linyphidae	(Blackwall, 1859)	Linyphidae	0	3	3
Liocranidae	(Simon, 1897)	Liocranidae	0	0	1
Lycosidae	(Sundevall, 1833)	Lycosidae	3	9	16
Mermessus trilobatus	(Emerton, 1882)	Linyphiidae	4	1	7
Micaria pulicaria	(Sundevall, 1831)	Gnaphosidae	4	0	1
Micrargus subaequalis	(Westring, 1851)	Linyphiidae	2	0	3
Microneta viaria	(Blackwall, 1841)	Linyphiidae	0	0	4
Neottiura bimaculata	(Linné, 1767)	Theridiidae	2	0	0
Neriene clathrata	(Sundevall, 1830)	Linyphiidae	1	1	2
Neriene montana	(Clerck, 1757)	Linyphiidae	0	0	2
Nigma flavescens	(Walckenaer, 1830)	Dictynidae	0	0	1

SPECIES (or higher taxon level)	Description	Family	HABITAT		
			forest	*grassland*	*HAL*
Ozyptila praticola	(C. L. Koch, 1837)	Thomisidae	2	36	53
Ozyptila simplex	(O. P. -Cambridge, 1862)	Thomisidae	8	0	0
Pachygnatha degeeri	(Sundevall, 1830)	Tetragnathidae	48	4	10
Paidiscura pallens	(Blackwall, 1834)	Theridiidae	0	1	0
Palliduphantes pallidus	(O. P.-Cambridge, 1871)	Linyphiidae	0	0	2
Parasteatoda simulans	(Thorell, 1875)	Theridiidae	0	0	1
Pardosa agrestis	(Westring, 1861)	Lycosidae	1	0	1
Pardosa amentata	(Clerck, 1757)	Lycosidae	1	1	0
Pardosa lugubris	(Walckenaer, 1802)	Lycosidae	186	32	48
Pardosa palustris	(Linné, 1758)	Lycosidae	74	8	19
Pardosa prativaga	(L. Koch, 1870)	Lycosidae	104	6	6
Pardosa pullata	(Clerck, 1757)	Lycosidae	20	3	3
Pardosa riparia	(C. L. Koch, 1833)	Lycosidae	2	0	0
Pardosa saltans	(Töpfer-Hofmann in T. Hofmann, Cordes & von Helversen, 2000)	Lycosidae	7	4	7
Phrurolithus festivus	(C. L. Koch, 1835)	Phrurolithidae	1	0	0
Piratula hygrophila	(Thorell, 1872)	Lycosidae	1	1	0
Piratula latitans	(Blackwall, 1841)	Lycosidae	0	0	2
Pisaura mirabilis	(Clerck, 1757)	Pisauridae	8	0	0
Platnickina tincta	(Walckenaer, 1802)	Theridiidae	1	0	0
Robertus neglectus	(O. P.-Cambridge, 1871)	Theridiidae	0	2	0
Segestria senoculata	(Linné, 1758)	Segestriidae	0	1	4
Tegenaria silvestris	(L. Koch, 1872)	Agelenidae	0	0	1
Tenuiphantes flavipes	(Blackwall, 1854)	Linyphiidae	4	28	118
Tenuiphantes mengei	(Kulczyński, 1887)	Linyphiidae	1	0	2
Tenuiphantes tenuis	(Blackwall, 1852)	Linyphiidae	3	4	15
Theridion varians	(Hahn, 1833)	Theridiidae	0	0	1
Trochosa ruricola	(De Geer, 1778)	Lycosidae	13	8	38
Trachyzelotes pedestris	(C. L. Koch, 1837)	Gnaphosidae	3	1	0
Trochosa terricola	(Thorell, 1856)	Lycosidae	3	15	18
Walckenaeria atrotibialis	(O. P.-Cambridge, 1878)	Linyphiidae	1	10	7
Walckenaeria dysderoides	(Wider, 1834)	Linyphiidae	1	2	0
Xerolycosa miniata	(C. L. Koch, 1834)	Lycosidae	1	1	1
Xysticus acerbus	(Thorell, 1872)	Thomisidae	1	0	0
Xysticus bifasciatus	(C. L. Koch, 1837)	Thomisidae	1	0	0
Xysticus cristatus	(Clerck, 1757)	Thomisidae	12	0	0
Xysticus kochi	(Thorell, 1872)	Thomisidae	1	0	1
Xysticus ulmi	(Hahn, 1831)	Thomisidae	1	0	0
Zelotes latreillei	(Simon, 1878)	Gnaphosidae	1	0	0
Zelotes subterraneus	(C. L. Koch, 1833)	Gnaphosidae	0	0	1
Zora spinimana	(Sundevall, 1833)	Miturgidae	0	0	4
TOTAL			**571**	**366**	**719**

Table SD.2 Species and their quantity within studied habitats for ground beetles (Coleoptera: Carabidae)

SPECIES	Description	HABITAT		
		forest	*grassland*	*HAL*
Abax carinatus	(Duftschmid, 1812)	5	7	11
Abax parallelepipedus	(Piller et Mitterpacher, 1783)	0	14	18
Abax parallelus	(Duftschmid, 1812)	1	70	8
Amara aenea	(De Geer, 1774)	5	0	1
Amara communis	(Panzer, 1797)	0	1	0
Amara convexior	(Stephens, 1828)	1	1	8
Amara familiaris	(Duftschmid, 1812)	0	0	1
Amara lunicollis	(Schioedte, 1837)	1	0	0
Amara makolskii	(Roubal, 1923)	3	0	0
Amara montivaga	(Sturm, 1825)	1	0	0
Amara nitida	(Sturm, 1825)	1	0	0
Amara ovata	(Fabricius, 1792)	0	0	1
Amara plebeja	(Gyllenhal, 1810)	0	0	7
Amara pulpani	(Kult, 1949)	2	0	0
Amara similata	(Gyllenhal, 1810)	2	0	0
Anchomenus dorsalis	(Pontoppidan, 1763)	20	0	12
Badister bullatus	(Schrank, 1798)	0	1	0
Badister lacertosus	(Sturm, 1815)	0	0	1
Badister sodalis	(Duftschmid, 1812)	1	0	0
Bembidion lampros	(Herbst, 1784)	26	7	18
Bembidion mannerheimii	(C.R. Sahlberg, 1827)	1	4	2
Bembidion obtusum	(Audinet-Serville, 1821)	1	3	6
Bembidion properans	(Stephens, 1828)	4	0	0
Calathus fuscipes	(Goeze, 1777)	1	1	4
Calathus melanocephalus	(Linnaeus, 1758)	0	0	2
Carabus coriaceus	(Linnaeus, 1758)	0	3	0
Carabus granulatus	(Linnaeus, 1758)	2	0	0
Carabus hortensis	(Linnaeus, 1758)	0	7	0
Carabus nemoralis	(O.F. Müller, 1764)	8	3	13
Cicindela campestris	(Linnaeus, 1758)	1	0	0
Dyschirius globosus	(Herbst, 1784)	3	0	0
Harpalus affinis	(Schrank, 1781)	0	0	1
Harpalus latus	(Linnaeus, 1758)	4	0	0
Harpalus luteicornis	(Duftschmid, 1812)	0	0	3
Harpalus rufipes	(De Geer, 1774)	5	0	4
Lebia chlorocephala	(J.J. Hoffmann, 1803)	2	0	0
Leistus ferrugineus	(Linnaeus, 1758)	0	1	5
Molops elatus	(Fabricius, 1801)	0	4	1

SPECIES	Description	HABITAT		
		forest	*grassland*	*HAL*
Molops piceus	(Panzer, 1793)	0	7	0
Nebria brevicollis	(Fabricius, 1792)	45	86	86
Notiophilus biguttatus	(Fabricius, 1779)	2	7	0
Notiophilus germinyi	(Fauvel, 1863)	2	0	2
Notiophilus palustris	(Duftschmid, 1812)	2	1	4
Notiophilus rufipes	(Curtis, 1829	1	1	0
Ophonus laticollis	(Mannerheim, 1825)	0	1	0
Ophonus rufibarbis	(Fabricius, 1792)	0	0	1
Ophonus rupicola	(Sturm, 1818)	0	2	0
Panagaeus bipustulatus	(Fabricius, 1775)	0	0	5
Platynus assimilis	(Paykull, 1790)	1	11	10
Poecilus versicolor	(Sturm, 1824)	18	0	0
Pterostichus melanarius	(Illiger, 1798)	0	3	3
Pterostichus melas	(Creutzer, 1799)	0	0	1
Pterostichus niger	(Schaller, 1783)	0	1	1
Pterostichus oblongopunctatus	(Fabricius, 1787)	1	8	2
Pterostichus ovoideus	(Sturm, 1824)	16	3	9
Pterostichus strenuus	(Panzer, 1796)	0	0	1
Pterostichus vernalis	(Panzer, 1796)	4	0	0
Syntomus truncatellus	(Linnaeus, 1761)	1	0	0
Synuchus vivalis	(Illiger, 1798)	0	1	2
Trechus quadristriatus	(Schrank, 1781)	0	0	2
TOTAL		**194**	**259**	**256**