

Killewald, M.F. and Gibbs, J. 2026. Grazing supports more oligolectic bees (Hymenoptera) than hay fields: functional differences in pollinator communities among pasture landscapes. *The Canadian Entomologist*, 158.

Table S1. Abundance of each species identified from sites of three treatments. *Bees were collected in western Manitoba from 2020 – 2022. Treatments included: graze – locations that are rotationally grazed by cattle; natural – semi-natural sites that have not been managed for at least 5 years; and hay – fields that have been planted with an enhanced hay mixture. Species trait data are largely extracted from Gibbs et al. (2023), a checklist of the bees (Hymenoptera: Apoidea) of Manitoba. Transect type included: random – randomly placed transects within the field; and selective – transects were placed purposefully in areas with high floral abundance, bees visible, or in areas where the observer thought that capturing bees would be likely.*

Family	Genus	Species	Authority	Sociality	Nesting	Lecty	Transect Type	Graze	Hay	Natural
Andrenidae	<i>Andrena</i>	<i>campanulae</i>	Viereck and Cockerell, 1914	solitary	ground	oligolectic	random	0	0	1
Andrenidae	<i>Andrena</i>	<i>chromotricha</i>	Cockerell, 1899	solitary	ground	oligolectic	selective	2	1	0
Andrenidae	<i>Andrena</i>	<i>lupinorum</i>	Cockerell, 1906	solitary	ground	oligolectic	random	0	0	1
Andrenidae	<i>Andrena</i>	<i>lupinorum</i>	Cockerell, 1906	solitary	ground	oligolectic	selective	0	0	3
Andrenidae	<i>Andrena</i>	<i>nubecula</i>	Cockerell, 1931	solitary	ground	oligolectic	random	0	0	1
Andrenidae	<i>Andrena</i>	<i>regularis</i>	Malloch, 1917	solitary	ground	polylectic	random	1	0	0
Andrenidae	<i>Andrena</i>	<i>runcinatae</i>	Cockerell, 1906	solitary	ground	polylectic	random	2	0	2
Andrenidae	<i>Andrena</i>	<i>runcinatae</i>	Cockerell, 1906	solitary	ground	polylectic	selective	1	0	2
Andrenidae	<i>Andrena</i>	<i>thaspiae</i>	Graenicher, 1903	solitary	ground	polylectic	selective	2	0	1
Andrenidae	<i>Andrena</i>	<i>thaspiae</i>	Graenicher, 1903	solitary	ground	polylectic	random	0	0	1
Andrenidae	<i>Andrena</i>	<i>wilkella</i>	(Kirby, 1802)	solitary	ground	oligolectic	selective	0	0	1
Andrenidae	<i>Calliopsis</i>	<i>coloradensis</i>	Cresson, 1878	solitary	ground	oligolectic	random	2	0	0
Andrenidae	<i>Calliopsis</i>	<i>coloradensis</i>	Cresson, 1878	solitary	ground	oligolectic	selective	5	0	1
Andrenidae	<i>Perdita</i>	<i>bruneri</i>	Cockerell, 1897	solitary	ground	oligolectic	random	27	0	1
Andrenidae	<i>Perdita</i>	<i>bruneri</i>	Cockerell, 1897	solitary	ground	oligolectic	selective	49	0	8
Andrenidae	<i>Perdita</i>	<i>swenki</i>	Crawford, 1915	solitary	ground	oligolectic	random	7	0	1
Andrenidae	<i>Perdita</i>	<i>swenki</i>	Crawford, 1915	solitary	ground	oligolectic	selective	24	0	1

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Andrenidae	<i>Protandrena</i>			solitary	ground	oligolectic	selective	1	0	0
Andrenidae	<i>Protandrena</i>	<i>aestivalis</i>	(Provancher, 1882)	solitary	ground	oligolectic	random	2	0	0
Andrenidae	<i>Protandrena</i>	<i>aestivalis</i>	(Provancher, 1882)	solitary	ground	oligolectic	selective	2	0	2
Andrenidae	<i>Protandrena</i>	<i>parvus</i>	(Robertson, 1892)	solitary	ground	polylectic	selective	2	0	0
Andrenidae	<i>Protandrena</i>	<i>renimaculatus</i>	(Cockerell, 1896)	solitary	ground	oligolectic	selective	1	0	0
Total Andrenidae							random	41	0	8
							selective	89	1	19
							total	130	1	27
Apidae	<i>Anthophora</i>	<i>terminalis</i>	Cresson, 1869	solitary	wood	polylectic	random	0	0	3
Apidae	<i>Apis</i>	<i>mellifera</i>	Linnaeus, 1758	eusocial	hive	polylectic	random	15	15	9
Apidae	<i>Apis</i>	<i>mellifera</i>	Linnaeus, 1758	eusocial	hive	polylectic	selective	2	17	11
Apidae	<i>Bombus</i>	<i>borealis</i>	Kirby, 1837	eusocial	hive	polylectic	random	8	0	9
Apidae	<i>Bombus</i>	<i>borealis</i>	Kirby, 1837	eusocial	hive	polylectic	selective	6	0	14
Apidae	<i>Bombus</i>	<i>griseocollis</i>	(DeGeer, 1773)	eusocial	hive	polylectic	random	5	0	3
Apidae	<i>Bombus</i>	<i>griseocollis</i>	(DeGeer, 1773)	eusocial	hive	polylectic	selective	2	0	1
Apidae	<i>Bombus</i>	<i>huntii</i>	Greene, 1860	eusocial	hive	polylectic	random	0	0	1
Apidae	<i>Bombus</i>	<i>insularis</i>	(Smith, 1861)		hive		random	0	0	2
Apidae	<i>Bombus</i>	<i>insularis</i>	(Smith, 1861)		hive		selective	0	0	6
Apidae	<i>Bombus</i>	<i>rufocinctus</i>	Cresson, 1863	eusocial	hive	polylectic	random	4	1	16
Apidae	<i>Bombus</i>	<i>rufocinctus</i>	Cresson, 1863	eusocial	hive	polylectic	selective	5	0	16
Apidae	<i>Bombus</i>	<i>ternarius</i>	Say, 1837	eusocial	hive	polylectic	random	13	0	11

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Apidae	<i>Bombus</i>	<i>ternarius</i>	Say, 1837	eusocial	hive	polylectic	selective	16	1	21
Apidae	<i>Bombus</i>	<i>terricola</i>	Kirby, 1837	eusocial	hive	polylectic	random	3	2	2
Apidae	<i>Bombus</i>	<i>terricola</i>	Kirby, 1837	eusocial	hive	polylectic	selective	4	1	13
Apidae	<i>Bombus</i>	<i>vagans</i>	Smith, 1854	eusocial	hive	polylectic	random	5	0	1
Apidae	<i>Bombus</i>	<i>vagans</i>	Smith, 1854	eusocial	hive	polylectic	selective	1	1	0
Apidae	<i>Ceratina</i>	<i>calcarata</i>	Robertson, 1900	subsocial	stem	polylectic	selective	0	0	1
Apidae	<i>Epeolus</i>	<i>minimus</i>	(Robertson, 1902)		ground		random	0	0	1
Apidae	<i>Epeolus</i>	<i>minimus</i>	(Robertson, 1902)		ground		selective	0	0	3
Apidae	<i>Melissodes</i>	<i>agilis</i>	Cresson, 1878	solitary	ground	oligolectic	selective	2	0	1
Apidae	<i>Melissodes</i>	<i>agilis</i>	Cresson, 1878	solitary	ground	oligolectic	random	0	0	1
Apidae	<i>Melissodes</i>	<i>druriellus</i>	(Kirby, 1802)	solitary	ground	oligolectic	random	1	0	0
Apidae	<i>Melissodes</i>	<i>druriellus</i>	(Kirby, 1802)	solitary	ground	oligolectic	selective	0	0	1
Apidae	<i>Melissodes</i>	<i>menuachus</i>	Cresson, 1868	solitary	ground	oligolectic	random	1	0	0
Apidae	<i>Melissodes</i>	<i>rivalis</i>	Cresson, 1872	solitary	ground	oligolectic	random	4	0	2
Apidae	<i>Melissodes</i>	<i>rivalis</i>	Cresson, 1872	solitary	ground	oligolectic	selective	3	0	2
Apidae	<i>Triepeolus</i>	<i>obliteratus</i>	Graenicher, 1911		ground		random	1	0	0
Apidae	<i>Triepeolus</i>	<i>occidentalis</i>	(Cresson, 1878)		ground		random	0	0	1
Total Apidae							random	60	18	62
							selective	41	20	90
							total	101	38	152
Colletidae	<i>Colletes</i>	<i>andrewsi</i>	Cockerell, 1906	solitary	ground	oligolectic	selective	1	0	0

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Colletidae	<i>Colletes</i>	<i>hyalinus</i>	Provancher, 1888	solitary	ground	polylectic	random	1	0	2
Colletidae	<i>Colletes</i>	<i>hyalinus</i>	Provancher, 1888	solitary	ground	polylectic	selective	1	0	0
Colletidae	<i>Colletes</i>	<i>kincaidii</i>	Cockerell, 1898	solitary	ground	polylectic	selective	0	0	1
Colletidae	<i>Colletes</i>	<i>simulans</i>	Cockerell, 1929	solitary	ground	oligolectic	selective	0	0	1
Colletidae	<i>Hylaeus</i>	<i>affinis</i>	(Smith, 1853)	solitary	stem	polylectic	selective	0	0	1
Colletidae	<i>Hylaeus</i>	<i>mesillae</i>	(Cockerell, 1896)	solitary	stem	polylectic	selective	0	0	8
Colletidae	<i>Hylaeus</i>	<i>verticillis</i>	(Cresson, 1869)	solitary	stem	polylectic	random	0	0	1
total Colletidae							random	1	0	3
							selective	2	0	11
							total	3	0	14
Halictidae	<i>Agapostemon</i>	<i>sericeus</i>	(Forster, 1771)	solitary	ground	polylectic	selective	1	0	0
Halictidae	<i>Agapostemon</i>	<i>texanus</i>	Cresson, 1872	solitary	ground	polylectic	random	1	0	1
Halictidae	<i>Agapostemon</i>	<i>texanus</i>	Cresson, 1872	solitary	ground	polylectic	selective	0	0	2
Halictidae	<i>Dufourea</i>	<i>marginata</i>	(Cresson, 1878)	solitary	ground	oligolectic	random	0	0	1
Halictidae	<i>Halictus</i>	<i>confusus</i>	Smith, 1853	eusocial	ground	polylectic	random	1	0	0
Halictidae	<i>Halictus</i>	<i>confusus</i>	Smith, 1853	eusocial	ground	polylectic	selective	2	0	1
Halictidae	<i>Halictus</i>	<i>rubicundus</i>	Christ, 1791	eusocial	ground	polylectic	selective	4	0	0
Halictidae	<i>Halictus</i>	<i>rubicundus</i>	Christ, 1791	eusocial	ground	polylectic	random	0	0	2
Halictidae	<i>Lasioglossum</i>	<i>albipenne</i>	(Robertson, 1890)	eusocial	ground	polylectic	selective	0	0	1
Halictidae	<i>Lasioglossum</i>	<i>leucocomus</i>	(Lovell, 1908)	eusocial	ground	polylectic	random	1	0	0
Halictidae	<i>Lasioglossum</i>	<i>leucocomus</i>	(Lovell, 1908)	eusocial	ground	polylectic	selective	1	0	0

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Halictidae	<i>Lasioglossum</i>	<i>leucozonium</i>	(Schrank, 1781)	solitary	ground	polylectic	selective	1	0	3
Halictidae	<i>Lasioglossum</i>	<i>leucozonium</i>	(Schrank, 1781)	solitary	ground	polylectic	random	0	0	1
Halictidae	<i>Lasioglossum</i>	<i>paraforbesii</i>	McGinley, 1986	solitary	ground	polylectic	selective	0	0	1
Halictidae	<i>Lasioglossum</i>	<i>perpunctatum</i>	(Ellis, 1913)	eusocial	ground	polylectic	selective	1	0	2
Halictidae	<i>Lasioglossum</i>	<i>perpunctatum</i>	(Ellis, 1913)	eusocial	ground	polylectic	random	0	0	1
Halictidae	<i>Lasioglossum</i>	<i>pilosum</i>	(Smith, 1853)	eusocial	ground	polylectic	random	1	0	0
Halictidae	<i>Lasioglossum</i>	<i>succinipenne</i>	(Ellis, 1913)	eusocial	ground	polylectic	random	1	0	0
total Halictidae							random	5	0	6
							selective	10	0	10
							total	15	0	16
Megachilidae	<i>Anthidium</i>	<i>clypeodentatum</i>	Swenk, 1914	solitary	ground	polylectic	selective	0	0	1
Megachilidae	<i>Coelioxys</i>	<i>rufitarsis</i>	Smith, 1854		ground		random	0	0	1
Megachilidae	<i>Heriades</i>	<i>carinata</i>	Cresson, 1864	solitary	stem	polylectic	random	1	0	3
Megachilidae	<i>Heriades</i>	<i>carinata</i>	Cresson, 1864	solitary	stem	polylectic	selective	3	0	8
Megachilidae	<i>Heriades</i>	<i>variolosa</i>	(Cresson, 1872)	solitary	stem	oligolectic	random	1	0	1
Megachilidae	<i>Heriades</i>	<i>variolosa</i>	(Cresson, 1872)	solitary	stem	oligolectic	selective	0	0	7
Megachilidae	<i>Hoplitis</i>	<i>pilosifrons</i>	(Cresson, 1864)	solitary	stem	polylectic	selective	0	0	1
Megachilidae	<i>Hoplitis</i>	<i>producta</i>	(Cresson, 1864)	solitary	stem	polylectic	selective	1	0	1
Megachilidae	<i>Hoplitis</i>	<i>spoliata</i>	(Provancher, 1888)	solitary	stem	polylectic	random	0	0	1
Megachilidae	<i>Megachile</i>	<i>brevis</i>	Say, 1837	solitary	cavity	polylectic	random	0	0	1
Megachilidae	<i>Megachile</i>	<i>brevis</i>	Say, 1837	solitary	cavity	polylectic	selective	0	0	1
Megachilidae	<i>Megachile</i>	<i>frigida</i>	Smith, 1853	solitary	cavity	polylectic	selective	0	0	1

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Megachilidae	<i>Megachile</i>	<i>inermis</i>	Provancher, 1888	solitary	cavity	polylectic	random	4	0	3
Megachilidae	<i>Megachile</i>	<i>inermis</i>	Provancher, 1888	solitary	cavity	polylectic	selective	5	0	8
Megachilidae	<i>Megachile</i>	<i>latimanus</i>	Say, 1823	solitary	ground	polylectic	random	1	1	0
Megachilidae	<i>Megachile</i>	<i>latimanus</i>	Say, 1823	solitary	ground	polylectic	selective	1	0	0
Megachilidae	<i>Megachile</i>	<i>melanophaea</i>	Smith, 1853	solitary	ground	polylectic	selective	1	0	0
Megachilidae	<i>Megachile</i>	<i>montivaga</i>	Cresson, 1878	solitary	stem	polylectic	random	1	0	0
Megachilidae	<i>Megachile</i>	<i>relativa</i>	Cresson, 1878	solitary	cavity	polylectic	selective	2	0	1
Megachilidae	<i>Megachile</i>	<i>relativa</i>	Cresson, 1878	solitary	cavity	polylectic	random	0	0	2
Megachilidae	<i>Megachile</i>	<i>rotundata</i>	(Fabricius, 1787)	solitary	cavity	polylectic	selective	0	0	1
Megachilidae	<i>Osmia</i>	<i>simillima</i>	Smith, 1853	solitary	cavity	polylectic	random	0	0	1
total Megachilidae							random	8	1	13
							selective	13	0	30
							total	21	1	43