

Lessard, J.-P., Sackett, T. E., Reynolds, W. N., Fowler, D. A. and Sanders, N. J. 2011. Determinants of the detrital arthropod community structure: the effects of temperature and resources along an environmental gradient. – Oikos 120: 333–343.

Appendix 1

Site description. For each site, the table shows elevation, general forest type, composition of the dominant vegetation, minimum, maximum and mean temperature. Staff at Great Smoky Mountains National Park provided the vegetation and climate data.

Elevation (m)	Ecogroup	Dominant vegetation	Temperature (°C)					Annual Mean
			January		July			
			Max	Min	Max	Min	Max	Min
383	Successional hardwood forests	<i>Tilia americana</i> <i>Quercus rubra</i> <i>Quercus alba</i> <i>Picea ruben</i> <i>Liriodendron tulipifera</i> <i>Halesia tetraptera</i> <i>Fraxinus americana</i> <i>Aesculus flava</i> <i>Aesculus flava</i> <i>Acer saccharum</i> <i>Acer rubrum</i> <i>Betula alleghaniensis</i>	19.44	4.00	23.44	19.00		16
509	Montane cove forests		16.88	3.00	20.70	18.00		14
561	Successional hardwood forests		17.26	3.00	21.78	18.00		15
610	Montane cove forests		16.94	3.00	21.86	18.00		14
615	Successional hardwood forests		15.90	2.00	19.97	18.00		13
637	Successional hardwood forests		16.03	2.00	20.41	17.00		13
652	Successional hardwood forests		16.36	2.00	21.04	18.00		14
685	Successional hardwood forests		17.22	3.00	22.17	18.00		15
808	Montane cove forests		15.58	1.00	19.93	17.00		13
833	Montane cove forests		15.40	2.00	20.85	17.00		13
857	Montane cove forests		15.08	1.00	20.26	17.00		13
1120	High elevation red oak/white oak forests		11.86	0.00	19.23	15.00		11
1144	Northern hardwood/boulderfield forests		11.22	0.00	20.23	15.00		11
1228	High elevation red oak/white oak forests		11.75	0.00	20.94	16.00		12
1249	High elevation red oak/white oak forests		12.00	0.00	20.81	16.00		12

Appendix 2

List of leaf-litter arthropod taxa sampled using Winkler extractors in Great Smoky Mountains National Park. Except for ants, morphospecies names are arbitrary and correspond to a specimen in the voucher collection. The occurrence column shows the number of 1-m² quadrats in which each morphospecies was recorded and the abundance column shows the total number of individuals recorded across all quadrats.

Group	Class	Order	Family	Subfamily	Genus	Morphospecies	Occurrence	Abundance
Spiders	Arachnida	Aranea	Agelenidae			<i>Agelenidae</i>	2	3
Spiders	Arachnida	Aranea	Amaurobiidae			<i>Amaurobiidae</i>	15	99
Spiders	Arachnida	Aranea	Araneidae			<i>Araneidae</i>	5	6
Spiders	Arachnida	Aranea	Clubionidae			<i>Clubionidae</i>	7	8
Spiders	Arachnida	Aranea	Corinnidae			<i>Corinnidae</i>	13	87
Spiders	Arachnida	Aranea	Dictynidae			<i>Dictynidae</i>	9	21
Spiders	Arachnida	Aranea	Gnaphosidae			<i>Gnaphosidae</i>	4	9
Spiders	Arachnida	Aranea	Hahnidae			<i>Hahnidae</i>	1	1
Spiders	Arachnida	Aranea	Leptonetidae			<i>Leptonetidae</i>	3	4
Spiders	Arachnida	Aranea	Linyphiidae			<i>Linyphiidae</i>	14	265
Spiders	Arachnida	Aranea	Lycosidae			<i>Lycosidae</i>	13	166
Spiders	Arachnida	Aranea	Oonopidae			<i>Oonopidae</i>	1	2
Spiders	Arachnida	Aranea	Salticidae			<i>Salticidae</i>	15	79
Spiders	Arachnida	Aranea	Theridiidae			<i>Theridiidae</i>	5	7
Spiders	Arachnida	Aranea	Thomisidae			<i>Thomisidae</i>	8	17
Mites	Arachnida	Mesostigmata	Epicriidae		<i>Epicrius</i>	<i>Epicrius</i>	7	30
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Uropodidae</i> sp.1	1	11
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Uropodidae</i> sp.2	3	3
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.1	8	16
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.10	3	4
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.11	2	2
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.12	3	4
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.13	3	31
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.14	1	5
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.15	1	1
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.16	5	12
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.18	1	1
Mites	Arachnida	Mesostigmata	Uropodidae			<i>Mesostigmata</i> sp.2	4	37

Mites	Arachnida	Mesostigmata				1	<i>Mesostigmata</i> sp.20		2
Mites	Arachnida	Mesostigmata				1	<i>Mesostigmata</i> sp.3		2
Mites	Arachnida	Mesostigmata				2	<i>Mesostigmata</i> sp.4		6
Mites	Arachnida	Mesostigmata				3	<i>Mesostigmata</i> sp.5		5
Mites	Arachnida	Mesostigmata				9	<i>Mesostigmata</i> sp.6		34
Mites	Arachnida	Mesostigmata				2	<i>Mesostigmata</i> sp.7		4
Mites	Arachnida	Mesostigmata				2	<i>Mesostigmata</i> sp.8		2
Mites	Arachnida	Mesostigmata				6	<i>Mesostigmata</i> sp.9		15
Mites	Arachnida	Oribatida	Camisiidae		<i>Camisia</i>	2	<i>Camisia</i>		3
Mites	Arachnida	Oribatida	Camisiidae		<i>Camisiidae</i>	1			1
Mites	Arachnida	Oribatida	Carabodidae		<i>Carabodes</i>	6	<i>Carabodes</i>		11
Mites	Arachnida	Oribatida	Carabodidae		<i>Carabodes</i>	1	<i>Carabodes</i>		1
Mites	Arachnida	Oribatida	Carabodidae		<i>Cubabodes</i>	4	<i>Cubabodes</i>		6
Mites	Arachnida	Oribatida	Cepheidae		<i>Sadocephus</i>	1	<i>Sadocephus</i>		1
Mites	Arachnida	Oribatida	Cepheidae		<i>Cepheidae</i> sp.1	2			4
Mites	Arachnida	Oribatida	Ceratozetidae		<i>Trichoribates</i>	2	<i>Trichoribates</i>		6
Mites	Arachnida	Oribatida	Eniochthoniidae		<i>Eniochthonius</i>	1	<i>Eniochthonius</i>		1
Mites	Arachnida	Oribatida	Euphthiracaridae		<i>Euphthiracarus</i>	5	<i>Euphthiracarus</i>		16
Mites	Arachnida	Oribatida	Euphthiracaridae		<i>Euphthiracarus</i>	2	<i>Euphthiracarus</i>		7
Mites	Arachnida	Oribatida	Euphthiracaridae		<i>Rhysotritia</i>	5	<i>Rhysotritia</i>		11
Mites	Arachnida	Oribatida	Euphthiracaridae		<i>Rhysotritia</i>	1	<i>Rhysotritia</i>		1
Mites	Arachnida	Oribatida	Galumnidae		<i>Galumna</i>	13	<i>Galumna</i>		139
Mites	Arachnida	Oribatida	Galumnidae		<i>Holokalumna</i>	4	<i>Holokalumna</i>		42
Mites	Arachnida	Oribatida	Gymnodamaeidae			1	<i>Gymnodamaeidae</i> sp.1		1
Mites	Arachnida	Oribatida	Gymnodamaeidae			1	<i>Gymnodamaeidae</i> sp.2		1
Mites	Arachnida	Oribatida	Haplozetidae		<i>Haplozetes</i>	3	<i>Haplozetes</i>		19
Mites	Arachnida	Oribatida	Hermannelliidae		<i>Hermannella</i>	2	<i>Hermannella</i>		2
Mites	Arachnida	Oribatida	Hermannelliidae		<i>Hermannella</i>	1	<i>Hermannella</i>		1
Mites	Arachnida	Oribatida	Hermanniiidae		<i>Hermannia</i>	5	<i>Hermannia</i>		32
Mites	Arachnida	Oribatida	Liacaridae		<i>Opsoristes</i>	12	<i>Opsoristes</i>		234
Mites	Arachnida	Oribatida	Liacaridae		<i>Xenillus</i>	4	<i>Xenillus</i>		10
Mites	Arachnida	Oribatida	Liacaridae		<i>Xenillus</i>	1	<i>Xenillus</i>		1
Mites	Arachnida	Oribatida	Lohmanniidae		<i>Lohmannia</i>	3	<i>Lohmannia</i>		5
Mites	Arachnida	Oribatida	Nanhermanniidae		<i>Nanhermannia</i>	1	<i>Nanhermannia</i>		1
Mites	Arachnida	Oribatida	Nehypochthoniidae		<i>Nehypochthonius</i>	9	<i>Nehypochthonius</i>		28

Mites	Arachnida	Oribatida	Nothridae	Nothrus	Nothrus	12	81
Mites	Arachnida	Oribatida	Oppidae	<i>Sphagnoppia</i>	<i>Sphagnoppia</i>	13	328
Mites	Arachnida	Oribatida	Oribatellidae	<i>Oribatella</i>	<i>Oribatella</i>	5	10
Mites	Arachnida	Oribatida	Oribatulidae	<i>Oribatulidae sp.1</i>	<i>Oribatulidae sp.1</i>	14	439
Mites	Arachnida	Oribatida	Oribotritiidae	<i>Oribotritia</i>	<i>Oribotritia</i>	11	172
Mites	Arachnida	Oribatida	Orocphoridae	<i>Dolicheremaeus</i>	<i>Dolicheremaeus</i>	1	1
Mites	Arachnida	Oribatida	Parakalummidae	<i>Parakalumma</i>	<i>Parakalumma</i>	3	15
Mites	Arachnida	Oribatida	Pelopiidae	<i>Ceratoppia</i>	<i>Ceratoppia</i>	15	1430
Mites	Arachnida	Oribatida	Phenopelopiidae	<i>Eupelops</i>	<i>Eupelops</i>	11	79
Mites	Arachnida	Oribatida	Phthiracaridae	<i>Phthiracarus</i>	<i>Phthiracaridae sp.1</i>	7	30
Mites	Arachnida	Oribatida	Phthiracaridae	<i>Phthiracarus</i>	<i>Phthiracarus</i>	6	94
Mites	Arachnida	Oribatida	Trihypochothoniidae	<i>Trihypochothonius</i>	<i>Trihypochothonius</i>	12	43
Mites	Arachnida	Oribatida			<i>Oribatida sp.1</i>	3	4
Mites	Arachnida	Oribatida			<i>Oribatida sp.10</i>	6	32
Mites	Arachnida	Oribatida			<i>Oribatida sp.11</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.12</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.13</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.14</i>	2	2
Mites	Arachnida	Oribatida			<i>Oribatida sp.16</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.2</i>	2	4
Mites	Arachnida	Oribatida			<i>Oribatida sp.3</i>	4	19
Mites	Arachnida	Oribatida			<i>Oribatida sp.4</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.5</i>	3	4
Mites	Arachnida	Oribatida			<i>Oribatida sp.6</i>	6	42
Mites	Arachnida	Oribatida			<i>Oribatida sp.7</i>	1	1
Mites	Arachnida	Oribatida			<i>Oribatida sp.8</i>	9	59
Mites	Arachnida	Oribatida			<i>Oribatida sp.9</i>	10	33
Mites	Arachnida	Prostigmata	Bdellidae	<i>Bdellidae sp.1</i>	<i>Bdellidae sp.1</i>	1	2
Mites	Arachnida	Prostigmata	Bdellidae	<i>Cyta</i>	<i>Cyta</i>	6	25
Mites	Arachnida	Prostigmata	Cunaxidae	<i>Cunaxidae sp.1</i>	<i>Cunaxidae sp.1</i>	3	4
Mites	Arachnida	Prostigmata		<i>Prostigmata sp.1</i>	<i>Prostigmata sp.1</i>	11	42
Mites	Arachnida	Prostigmata		<i>Prostigmata sp.2</i>	<i>Prostigmata sp.2</i>	9	17
Mites	Arachnida	Prostigmata		<i>Prostigmata sp.3</i>	<i>Prostigmata sp.3</i>	13	44
Mites	Arachnida	Prostigmata		<i>Prostigmata sp.4</i>	<i>Prostigmata sp.4</i>	8	13
Mites	Arachnida	Prostigmata		<i>Prostigmata sp.5</i>	<i>Prostigmata sp.5</i>	3	3

Mites	Arachnida	Prostigmata				14	117
Mites	Arachnida	Prostigmata				1	1
Mites	Arachnida	Prostigmata				2	2
Beetles	Insecta	Coleoptera	Carabidae	Carabinae		13	68
Beetles	Insecta	Coleoptera	Carabidae	Harpalinae		3	7
Beetles	Insecta	Coleoptera	Carabidae	Harpalinae		0	0
Beetles	Insecta	Coleoptera	Carabidae	Harpalinae		1	1
Beetles	Insecta	Coleoptera	Carabidae	Harpalinae		1	1
Beetles	Insecta	Coleoptera	Carabidae	Harpalinae		4	6
Beetles	Insecta	Coleoptera	Carabidae	Nebriinae		2	4
Beetles	Insecta	Coleoptera	Carabidae	Trechinae		2	3
Beetles	Insecta	Coleoptera	Carabidae	Trechinae		1	2
Beetles	Insecta	Coleoptera	Chrysomelidae	Cassidinae		2	4
Beetles	Insecta	Coleoptera	Chrysomelidae	Cassidinae		1	1
Beetles	Insecta	Coleoptera	Chrysomelidae	Cryptocephalinae		2	6
Beetles	Insecta	Coleoptera	Chrysomelidae	Cryptocephalinae		1	1
Beetles	Insecta	Coleoptera	Chrysomelidae	Eumolpinae		1	1
Beetles	Insecta	Coleoptera	Chrysomelidae	Eumolpinae		2	5
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		1	2
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		0	0
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		1	1
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		1	1
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		2	2
Beetles	Insecta	Coleoptera	Chrysomelidae	Galerucinae		2	33
Beetles	Insecta	Coleoptera	Corylophidae	Corylophinae		0	0
Beetles	Insecta	Coleoptera	Cryptophagidae	Cryptophaginae		5	8
Beetles	Insecta	Coleoptera	Curculionidae	Conoderinae		2	3
Beetles	Insecta	Coleoptera	Curculionidae	Cossoninae		9	33
Beetles	Insecta	Coleoptera	Curculionidae	Cryptocephalinae		1	1
Beetles	Insecta	Coleoptera	Curculionidae	Cryptohynchinae		2	4
Beetles	Insecta	Coleoptera	Curculionidae	Cryptohynchinae		1	1
Beetles	Insecta	Coleoptera	Curculionidae	Cryptohynchinae		2	2
Beetles	Insecta	Coleoptera	Curculionidae	Curculioninae		1	2
Beetles	Insecta	Coleoptera	Curculionidae	Entiminae		5	12
Beetles	Insecta	Coleoptera	Curculionidae	Entiminae		1	1

Beetles	Insecta	Coleoptera	Curculionidae	Entiminae	<i>Entiminae sp.3</i>	0	0
Beetles	Insecta	Coleoptera	Curculionidae	Scolytinae	<i>Scolytinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Endomychidae	Lycoperdininae	<i>Lycoperdininae sp.1</i>	1	2
Beetles	Insecta	Coleoptera	Hydrophilidae	Sphaeridiinae	<i>Sphaeridiinae sp.1</i>	2	3
Beetles	Insecta	Coleoptera	Leiodidae	Cholevinae	<i>Cholevinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Leiodidae	Cholevinae	<i>Cholevinae sp.2</i>	2	3
Beetles	Insecta	Coleoptera	Leiodidae	Cholevinae	<i>Leiodinae sp.3</i>	1	1
Beetles	Insecta	Coleoptera	Leiodidae	Leiodinae	<i>Cholevinae sp.3</i>	1	1
Beetles	Insecta	Coleoptera	Leiodidae	Leiodinae	<i>Leiodinae sp.1</i>	0	0
Beetles	Insecta	Coleoptera	Leiodidae	Leiodinae	<i>Leiodinae sp.2</i>	1	1
Beetles	Insecta	Coleoptera	Nitidulidae	Nitidulinae	<i>Nitidulinae sp.1</i>	4	5
Beetles	Insecta	Coleoptera	Nitidulidae	Nitidulinae	<i>Nitidulinae sp.2</i>	1	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.10</i>	0	0
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.11</i>	1	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.12</i>	1	1
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.13</i>	2	7
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.14</i>	1	1
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.15</i>	1	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.16</i>	2	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.17</i>	0	0
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.18</i>	2	5
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.2</i>	3	17
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.3</i>	1	1
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.4</i>	1	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.5</i>	3	6
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.6</i>	1	1
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.7</i>	3	7
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.8</i>	2	2
Beetles	Insecta	Coleoptera	Pselaphidae	Pselaphinae	<i>Pselaphinae sp.9</i>	3	4
Beetles	Insecta	Coleoptera	Ptiliidae	Ptiliinae	<i>Ptiliinae sp.1</i>	6	7
Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.1</i>	4	4
Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.2</i>	1	1
Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.3</i>	1	2
Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.4</i>	7	17

Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.5</i>	3	12
Beetles	Insecta	Coleoptera	Scydmaenidae	Scydmaeninae	<i>Scydmaeninae sp.6</i>	1	1
Beetles	Insecta	Coleoptera	Silvanidae	Silvaninae	<i>Silvaninae sp.1</i>	2	3
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.10</i>	1	6
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.11</i>	0	0
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.12</i>	2	2
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.13</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.14</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.15</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.16</i>	1	2
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.17</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.2</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.3</i>	0	0
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.4</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.5</i>	2	2
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.6</i>	2	5
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.7</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.8</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Aleocharinae	<i>Aleocharinae sp.9</i>	3	3
Beetles	Insecta	Coleoptera	Staphylinidae	Dasycterinae	<i>Dasycterinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Euaesthetinae	<i>Euaesthetinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Euaesthetinae	<i>Euaesthetinae sp.2</i>	5	12
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.1</i>	1	2
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.2</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.3</i>	1	2
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.4</i>	1	2
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.5</i>	2	3
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.6</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.7</i>	4	11
Beetles	Insecta	Coleoptera	Staphylinidae	Paederinae	<i>Paederinae sp.8</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Pselaphinae	<i>Pselaphinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Scaphidiinae	<i>Scaphidiinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Staphylininae	<i>Staphylininae sp.1</i>	3	4
Beetles	Insecta	Coleoptera	Staphylinidae	Steninae	<i>Steninae sp.1</i>	1	1

Beetles	Insecta	Coleoptera	Staphylinidae	Tachyporinae	<i>Tachyporinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Tachyporinae	<i>Tachyporinae sp.2</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Tachyporinae	<i>Tachyporinae sp.3</i>	1	1
Beetles	Insecta	Coleoptera	Staphylinidae	Tachyporinae	<i>Tachyporinae sp.4</i>	5	22
Beetles	Insecta	Coleoptera	Tenebrionidae	Lagriinae	<i>Lagriinae sp.1</i>	1	1
Beetles	Insecta	Coleoptera	Tenebrionidae	Lagriinae	<i>Lagriinae sp.2</i>	6	60
Beetles	Insecta	Coleoptera	Tenebrionidae	Lagriinae	<i>Lagriinae sp.3</i>	2	6
Beetles	Insecta	Coleoptera	Tenebrionidae	Lagriinae	<i>Lagriinae sp.4</i>	2	2
Springtails	Insecta	Collembola	Dycer.	<i>Bothriovulsus</i>	<i>Bothriovulsus</i>	3	9
Springtails	Insecta	Collembola	Entomobryidae		<i>Entomobryidae sp.1</i>	2	12
Springtails	Insecta	Collembola	Entomobryidae		<i>Entomobryidae sp.1</i>	2	9
Springtails	Insecta	Collembola	Entomobryidae		<i>Entomobryidae sp.1</i>	1	3
Springtails	Insecta	Collembola	Entomobryidae		<i>Homidia</i>	2	5
Springtails	Insecta	Collembola	Entomobryidae		<i>Orchacella</i>	4	19
Springtails	Insecta	Collembola	Entomobryidae		<i>Orchacella</i>	4	10
Springtails	Insecta	Collembola	Entomobryidae		<i>Orchacella sp.1</i>	2	18
Springtails	Insecta	Collembola	Entomobryidae		<i>Orchacella sp.2</i>	1	1
Springtails	Insecta	Collembola	Hypogastruridae		<i>Hypogastruridae sp.1</i>	15	131
Springtails	Insecta	Collembola	Hypogastruridae		<i>Hypogastruridae sp.2</i>	13	72
Springtails	Insecta	Collembola	Isotomidae		<i>Folsomia</i>	6	13
Springtails	Insecta	Collembola	Isotomidae		<i>Isotomidae sp.1</i>	1	1
Springtails	Insecta	Collembola	Isotomidae		<i>Isotomidae sp.2</i>	14	90
Springtails	Insecta	Collembola	Isotomidae		<i>Isotomidae sp.3</i>	2	3
Springtails	Insecta	Collembola	Isotomidae		<i>Isotomidae sp.4</i>	2	10
Springtails	Insecta	Collembola	Neanuridae		<i>Morulina sp.1</i>	12	69
Springtails	Insecta	Collembola	Neanuridae		<i>Morulina sp.2</i>	4	5
Springtails	Insecta	Collembola	Onychuridae		<i>Onychurus sp.1</i>	11	271
Springtails	Insecta	Collembola	Onychuridae		<i>Onychurus sp.2</i>	13	130
Springtails	Insecta	Collembola	Onychuridae		<i>Onychurus sp.3</i>	3	3
Springtails	Insecta	Collembola	Poduridae		<i>Podura</i>	1	1
Springtails	Insecta	Collembola	Smin/Dicyr		<i>Smin/Dicyr sp.1</i>	1	1
Springtails	Insecta	Collembola	Smin/Dicyr		<i>Smin/Dicyr sp.10</i>	1	1
Springtails	Insecta	Collembola	Smin/Dicyr		<i>Smin/Dicyr sp.11</i>	2	3
Springtails	Insecta	Collembola	Smin/Dicyr		<i>Smin/Dicyr sp.13</i>	1	1
Springtails	Insecta	Collembola	Smin/Dicyr		<i>Smin/Dicyr sp.14</i>	1	1

Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.15	1	1
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.2	4	20
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.3	1	4
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.4	4	22
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.5	2	2
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.6	8	35
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.7	2	2
Springtails	Insecta	Collembola	Smin/Dicyr	<i>Smin/Dicyr</i> sp.9	4	28
Springtails	Insecta	Collembola	Tomoceridae	<i>Pogognathellus</i>	1	1
Springtails	Insecta	Collembola	Tomoceridae	<i>Pogognathellus</i> sp.1	1	1
Springtails	Insecta	Collembola	Tomoceridae	<i>Pogognathellus</i> sp.2	1	1
Springtails	Insecta	Collembola	Tomoceridae	<i>Pogognathellus</i> sp.1	13	119
Springtails	Insecta	Collembola	Tomoceridae	<i>Pogognathellus</i> sp.2	12	42
Springtails	Insecta	Collembola	Tomoceridae	<i>Collembola</i> sp.1	1	2
Springtails	Insecta	Collembola	Tomoceridae	<i>Collembola</i> sp.2	1	4
Ants	Insecta	Hymenoptera	Amblyoponinae	<i>Amblyopone pallipes</i>	9	31
Ants	Insecta	Hymenoptera	Formicinae	<i>Lasius alienus</i>	7	126
Ants	Insecta	Hymenoptera	Formicinae	<i>Paratrechina faisonensis</i>	7	431
Ants	Insecta	Hymenoptera	Formicinae	<i>Prenolepis imparis</i>	7	118
Ants	Insecta	Hymenoptera	Formicinae	<i>Formica subsericea</i>	1	1
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Myrmecina americana</i>	13	303
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Aphaenogaster fulva</i>	1	2
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Tennohthorax longispinosus</i>	4	25
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Myrmica punctiventris</i>	1	5
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Pyramica</i> sp.1	9	193
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Aphaenogaster rudis</i>	14	284
Ants	Insecta	Hymenoptera	Myrmecinae	<i>Stenamma</i> sp.1	4	17
Ants	Insecta	Hymenoptera	Ponerinae	<i>Hypoponera opacior</i>	1	1
Ants	Insecta	Hymenoptera	Ponerinae	<i>Ponera pennsylvanica</i>	11	270
Ants	Insecta	Hymenoptera	Proceratiinae	<i>Proceratium silaceum</i>	1	1

Appendix 3

ANCOVA table examining the effects of elevation, food addition (food) and microclimate alteration (shade) on the abundance (N) and richness (S) of ants, spiders, beetles, mites, springtails and all arthropods combined. Degrees of freedom were $F_{3,59}$ or $F_{4,59}$ when a polynomial term of the second degree was included in the model. Asterisks indicate level of significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.0001$.

Taxa	Source of variance	Response	SS	F	p
Ants	elevation***	S	84.57	96.99	<0.0001
	elevation ² **		7.78	8.92	0.004
	food		0.60	0.69	0.41
	shade		3.26	3.74	0.06
	elevation***	N	18091.51	21.64	<0.0001
	food		201.63	0.24	0.63
	shade		3285.45	3.93	0.05
Spiders	elevation	S	2.29	0.90	0.35
	elevation ²		8.49	3.36	0.07
	food		6.02	2.38	0.13
	shade		1.35	0.53	0.47
	elevation	N	1.19	0.02	0.88
	elevation ² *		383.64	7.00	0.01
	food*		365.07	6.66	0.01
Beetles	shade*		308.27	5.62	0.02
	elevation	S	43.80	5.12	0.03
	elevation ² *		53.61	6.27	0.02
	food*		40.02	4.68	0.03
	shade		3.74	0.44	0.51
	elevation	N	34.03	0.66	0.42
	elevation ² **		521.56	10.18	0.002
Mites	food		190.82	3.73	0.06
	shade		7.34	0.14	0.71
	elevation	S	14.85	1.07	0.31
	food		19.27	1.38	0.24
	shade		26.67	1.92	0.17
	elevation	N	0.52	0.00	0.98
	food		0.60	0.00	0.98
Springtails	shade		0.60	0.00	0.98
	elevation	S	0.54	0.07	0.79
	food		1.35	0.18	0.68
	shade		1.35	0.18	0.68
	elevation*	N	1267.14	6.51	0.01
	elevation ²		495.90	2.55	0.12
	food		62.00	0.32	0.57
Total	shade		244.06	1.25	0.27
	elevation***	S	328.80	8.48	0.005
	elevation ² ***		389.74	10.05	0.002
	food*		183.79	4.74	0.03
	shade		43.33	1.12	0.30
	elevation***	N	36950.36	18.25	<0.0001
	food		135.06	0.07	0.80
shade		679.93	0.33	0.57	