

**Biogeographic patterns in small ground-dwelling vertebrates of the Western
Australian wheatbelt**

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Appendix 1: Environmental variable data

Appendix 2: Significant spearman rank order correlations table

Appendix 1. Environmental variable data for the 304 terrestrial biodiversity quadrats sampled during the biogeographic survey of the Western Australian Wheatbelt. Note that this appendix is identical to McKenzie *et al.* Appendix 3 (this volume).

Table 1. Soil chemical and textural data. Samples for analysis were based on composite (bulked) samples taken from the floristic quadrat at each survey quadrat. Ten sub-samples were taken from a regular grid covering each 10 x 10 metre quadrat. Sub-samples were taken from the A1 horizon at a uniform depth between 5-15 centimetres. Bulked samples each about 2 kg were air dried in the field prior to delivery to the laboratory. All soil assays were conducted by the Agricultural Chemistry Laboratory, Western Australian Chemistry Centre, Department of Minerals and Energy, Perth. Attribute codes and assay methods are explained at the foot of the table. In numerical analyses, missing values were represented by -9999, values reported using the '<' sign were replaced by a value one order of magnitude less (e.g. <2 → 0.2), and 0.001 was added to all Gypsum values to avoid divide-by-zero errors.

Quadrat	Clay	Silt	Sand	EC	pH	C	tot_N	tot_P	P	K	exCa	exMg	exNa	exK	Gypsum
BE01	2.81	2.39	94.8	2	5.4	0.65	0.023	31	<2	36	0.30b	0.15b	0.03b	0.07b	
BE02	3.19	4.71	92.11	3	6.4	0.82	0.052	68	<2	120	2.83b	1.14b	0.06b	0.24b	
BE03	1.27	3.88	94.85	2	5.9	1.09	0.071	240	<2	180	1.95b	0.34b	<0.02	0.30b	
BE04	4.06	4.34	91.6	4	6.1	0.77	0.061	110	3	230	2.71b	1.42b	0.14b	0.49b	
BE05	1.17	3.49	95.34	16	8.3	1.84	0.136	140	16	550	12.51c	2.13c	0.50c	1.72c	
BE06	1.64	6.89	91.48	670	7.1	1.15	0.073	240	5	860	11.10c	3.25c	1.34c	2.04c	2
BE07	2.8	2.4	94.8	4	6.4	0.58	0.036	77	<2	84	1.57b	0.36b	0.08b	0.13b	
BE08	5.18	4.05	90.77	6	6.7	0.77	0.057	82	2	210	3.92a	2.03a	0.22a	0.50a	
BE09	2.86	1.74	95.39	5	5.3	0.74	0.037	81	<2	57	0.63b	0.14b	0.11b	0.09b	
BE10	3.26	1.81	94.93	40	6.1	0.97	0.068	33	2	150	1.41b	1.10b	0.77b	0.27b	
BE11	1.82	3.93	94.26	37	7.6	0.36	0.038	61	3	290	0.80a	1.04a	0.85a	0.65a	
BE12	2.76	2.52	94.73	5	6.2	0.84	0.052	66	2	140	2.17b	0.60b	0.10b	0.28b	
BE13	2.28	4.99	92.72	5	7.1	1.43	0.104	100	7	450	6.58a	3.38a	0.20a	1.15a	
DA01	9.61	2.91	87.49	8	6.3	4.19	0.188	160	3	170	9.33b	1.45b	0.24b	0.37b	
DA02	2.65	6.27	91.08	1600	6.2	3.65	0.179	97	3	100	5.19b	11.88b	1.14b	0.10b	
DA03	2.75	2.52	94.73	6	5.7	1.44	0.065	44	2	65	1.20b	0.64b	0.20b	0.12b	
DA04	1.75	2.51	95.73	8	6	4.93	0.15	88	6	110	6.37b	1.50b	0.28b	0.21b	
DA05	2.83	1.76	95.41	14	5.9	1.34	0.069	52	2	75	1.23b	0.94b	0.63b	0.17b	
DA06	2.82	1.5	95.67	7	6.3	2.82	0.131	91	3	120	5.33b	1.06b	0.16b	0.23b	
DA07	16.43	10.1	73.47	900	6.5	3.08	0.223	190	27	230	4.88b	11.90b	6.86b	0.35b	
DA08	2.17	1.71	96.12	3	5.9	1.42	0.043	29	2	31	1.93b	0.45b	0.09b	0.08b	
DA09	2.76	2.55	94.7	6	5.5	2.04	0.077	44	<1	61	1.90b	0.59b	0.13b	0.13b	
DA10	1.89	2.87	95.25	4	6	4.75	0.125	96	2	82	7.09b	1.69b	0.14b	0.14b	
DA11	1.66	2.42	95.92	4	6.2	2.54	0.119	73	<2	130	3.86b	0.77b	0.13b	0.28b	
DA12	2.32	0.79	96.89	5	5.2	2.4	0.061	30	2	29	3.19b	0.78b	0.21b	0.06b	
DA13	3.66	4.19	92.15	8	6.1	3.47	0.229	120	2	220	12.10b	1.32b	0.14b	0.41b	
DN01	2.32	0.79	96.88	4	5.7	0.42	0.015	10	3	67	0.23b	0.13b	0.06b	0.14b	
DN02	3.09	4.57	92.34	5	5.6	0.85	0.047	26	3	73	0.59b	0.20b	0.10b	0.16b	
DN03	1.78	1.95	96.27	4	6.1	0.54	0.02	20	2	48	0.94b	0.22b	0.03b	0.09b	
DN04	2.66	2.17	95.17	11	6.5	1.51	0.077	52	4	180	4.24a	2.05a	0.27a	0.39a	
DN05	1.11	1.33	97.56	2	6.1	0.56	0.02	12	<2	20	0.81b	0.11b	0.02b	0.02b	
DN06	5.65	3.66	90.68	13	7.4	1.11	0.068	89	6	200	5.10a	0.99a	0.13a	0.50a	
DN07	3.33	1.06	95.61	19	6.6	0.3	0.013	11	<2	46	0.95a	0.67a	0.72a	0.13a	
DN08	2.9	1.02	96.08	2	6.3	0.34	0.011	11	<2	14	0.46b	<0.02	<0.02	<0.02	
DN09	1.86	1.48	96.66	3	5.8	0.95	0.022	14	5	24	1.71b	0.24b	0.06b	0.04b	
DN10	1.33	1.07	97.6	3	6	0.74	0.018	<10	<2	27	1.47b	0.25b	0.05b	0.06b	
DN11	2.9	0.75	96.36	2	5.9	0.57	0.016	<10	<2	<10	0.56b	<0.02	<0.02	<0.02	
DN12	2.73	1.4	95.87	2	5.8	0.56	0.016	12	<2	<10	0.53b	<0.02	<0.02	<0.02	
DU01	1.38	3.05	95.58	7	5.2	3.41	0.154	67	4	110	2.68b	1.06b	0.29b	0.22b	
DU02	2.86	2.93	94.22	5	5.5	2.15	0.104	86	2	98	2.76b	0.91b	0.16b	0.18b	
DU03	2.84	2.07	95.1	4	6	2.8	0.103	61	2	76	3.52b	0.82b	0.12b	0.16b	
DU04	1.47	0.66	97.88	7	5.5	1.24	0.043	26	2	26	1.34b	0.28b	0.07b	0.06b	
DU05	0	0	0	1000	7.8	3.69	0.287	180	22	550	9.00c	13.92c	5.58c	1.48c	2
DU06	1.18	3.5	95.32	130	5.7	1.81	0.104	79	2	120	10.05b	12.54b	3.27b	0.53b	
DU07	5.2	2.9	94.8	210	6.2	1.47	0.076	60	3	95	4.69b	5.57b	1.17b	0.20b	
DU08	8.05	2.96	88.99	490	7.4	1.26	0.064	51	2	240	3.24c	4.50c	1.90c	0.54c	<1
DU09	4.51	3.12	92.36	12	5.8	1.76	0.063	41	2	63	2.94b	1.26b	0.50b	0.14b	
DU10	11.13	4.8	84.07	56	6.2	3.64	0.178	290	27	450	11.38b	6.32b	1.04b	0.75b	
DU11	4.93	2.17	92.9	11	6.5	3.69	0.124	72	3	310	9.79b	2.49b	0.47b	0.60b	
DU12	6.57	1.19	92.24	2	5.9	0.95	0.031	28	<2	100	0.84b	0.19b	0.03b	0.04b	
DU13	4.8	0.66	94.54	3	6.2	0.73	0.026	22	<2	23	1.18b	0.17b	0.04b	0.05b	
ES01	2.32	0.79	96.88	3	5.5	0.71	0.028	<10	2	18	0.78b	0.17b	0.04b	0.02b	<1
ES02	1.74	1.97	96.29	4	5.8	0.46	0.025	<10	<2	68	0.49b	0.27b	0.11b	0.13b	
ES03	1.84	0.92	97.23	9	8.6	0.73	0.055	20	4	60	2.57c	0.73c	0.09c	0.11c	
ES04	3.65	0.19	96.16	720	7.6	0.79	0.034	<10	2	210	0.80c	3.09c	0.96c	0.22c	<1

Quadrat	Clay	Silt	Sand	EC	pH	C	tot_N	tot_P	P	K	exCa	exMg	exNa	exK	Gypsum
WH02	8.61	12.99	78.4	910	7.4	3.38	0.252	620	80	720	3.51c	12.41c	11.99c	1.85c	
WH03	1.35	1.89	96.76	2	5.9	0.77	0.028	20	<2	26	0.81b	0.12b	0.03b	0.04b	
WH04	1.62	5.54	92.85	5	6.3	2.09	0.104	98	<2	130	4.37b	1.77b	0.13b	0.28b	
WH05	3.38	3.32	93.3	8	6.1	1.23	0.068	49	<2	110	1.99b	1.89b	0.24b	0.21b	
WH06	4.34	2.77	92.89	2	6.2	0.62	0.035	36	<2	75	1.07b	0.37b	0.06b	0.13b	
WH07	2.25	3.24	94.51	9	6.6	1.85	0.118	89	4	240	4.33a	3.61a	0.30a	0.57a	
WH08	3.84	2.05	94.11	2	5.9	0.49	0.028	25	<2	48	0.47b	0.14b	<0.02	0.08b	
WH09	1.86	1.46	96.68	3	5.5	0.81	0.032	20	<2	24	0.80b	0.16b	0.03b	0.03b	
WH10	1.81	3.35	94.85	6	6.5	3.48	0.131	89	<2	170	6.90a	2.22a	0.43a	0.47a	
WH11	2.26	3.53	94.22	8	5.9	1.32	0.075	53	2	73	3.55b	0.34b	0.12b	0.12b	
WH12	4.19	4.93	90.88	210	8.3	0.37	0.028	66	3	360	0.60c	1.81c	0.98c	0.94c	<1
WH13	2.35	3.33	94.32	4	6.7	0.62	0.047	120	2	180	1.54a	0.51a	0.16a	0.40a	
WK01	1.55	3.74	94.7	6	6.1	1.23	0.073	52	2	100	2.69b	0.51b	0.15b	0.18b	
WK02	6.77	5.53	87.7	76	6.5	3.05	0.21	100	4	510	4.34a	4.91a	4.00a	1.28a	
WK03	2.19	3.42	94.39	21	7.7	0.98	0.09	69	4	170	1.86a	1.74a	0.79a	0.32a	
WK04	7.58	4.74	87.68	21	6.9	1.27	0.053	48	<2	170	3.24a	2.87a	0.73a	0.37a	
WK05	4.14	1.98	93.88	15	6.3	2.69	0.119	76	5	140	7.55b	1.67b	0.29b	0.30b	
WK06	0.62	1.29	98.09	6	5.8	0.81	0.025	14	<2	36	0.68b	0.17b	0.15b	0.09b	
WK07	4.89	6.5	88.61	7	6.1	1.78	0.11	66	3	230	6.08b	1.70b	0.18b	0.43b	
WK08	5.38	1.61	93.02	11	5.2	4.51	0.118	53	4	120	1.94b	0.78b	0.38b	0.22b	
WK09	2.18	2.84	94.97	13	5.5	2.3	0.098	55	2	110	1.26b	0.66b	0.45b	0.22b	
WK10	0.86	1.46	97.69	5	5.9	0.74	0.04	35	2	32	1.10b	0.11b	0.12b	0.04b	
WK11	2.77	3.38	93.85	8	6.1	1.92	0.083	76	3	120	3.24b	1.02b	0.19b	0.22b	
WK12	5.49	5.22	89.29	14	6.5	3.04	0.166	140	7	290	8.37a	1.77a	0.39a	0.59a	
WK13	0.7	0.84	98.46	4	5.7	1.05	0.03	11	2	23	0.92b	0.21b	0.06b	0.07b	
WU01	2.66	4.13	93.21	8	5.6	1.28	0.077	73	2	150	2.91b	0.71b	0.22b	0.27b	
WU02	6.26	5.17	88.57	4	6.6	1.22	0.068	72	3	270	4.20a	2.53a	0.24a	0.55a	
WU03	5.17	3.53	91.3	5	5.8	0.7	0.042	81	2	180	1.74b	0.76b	0.17b	0.36b	
WU04	3.75	2	94.26	2	5.6	0.65	0.025	26	<2	30	0.57b	0.15b	<0.02	0.04b	
WU05	3.86	2.96	93.18	4	5.2	0.83	0.041	33	<2	56	0.30b	0.11b	0.02b	0.10b	
WU06	2.66	5.33	92.01	6	5.3	1.02	0.051	47	2	90	0.62b	0.22b	0.17b	0.17b	
WU07	4.67	4.58	90.74	16	6.5	0.62	0.043	150	5	210	1.04a	1.57a	0.59a	0.56a	
WU08	0	0	0	350	8.6	0.31	0.03	87	21	200	7.73c	0.63c	0.61c	0.13c	94
WU09	3.39	3.38	93.23	18	7.9	1.11	0.07	85	5	280	10.15a	1.70a	0.21a	0.82a	
WU10	3.33	2.24	94.43	10	7	1.46	0.09	140	5	180	4.49a	1.48a	0.19a	0.44a	
WU11	9.7	4.02	86.28	22	6.4	1.49	0.081	83	6	220	4.31b	2.62b	0.37b	0.44b	
WU12	1.43	1.45	97.12	5	6.3	0.5	0.016	16	<2	31	1.06b	0.25b	0.10b	0.06b	
WU13	9.76	2.62	87.62	55	7.8	0.37	0.013	28	2	220	0.92a	1.13a	1.18a	0.56a	
YO01	0.94	4.79	94.27	38	6.4	1.49	0.077	160	4	140	2.22b	1.74b	1.02b	0.26b	
YO02	4.15	5.15	90.69	8	6.5	1.28	0.068	98	3	220	3.33a	1.27a	0.30a	0.47a	
YO03	2.24	2.92	94.84	5	5.9	1.16	0.05	39	2	89	1.25b	0.53b	0.17b	0.15b	
YO04	0.89	0.47	98.65	5	5.8	0.76	0.026	12	2	40	1.39b	0.35b	0.13b	0.06b	
YO05	6.3	3.84	89.86	42	5.8	7.07	0.202	110	7	280	6.77b	3.29b	1.44b	0.44b	
YO06	0.84	2.29	96.87	6	5.4	1.19	0.046	25	2	39	2.38b	0.36b	0.16b	0.06b	
YO07	0.83	2.01	97.16	7	6	2.07	0.07	47	3	83	3.63b	0.99b	0.21b	0.17b	
YO08	2.67	3.25	94.08	15	6.1	3.86	0.121	91	4	230	7.75b	1.35b	0.55b	0.41b	
YO09	1.25	3.48	95.27	11	5	2.71	0.174	87	6	92	1.22b	1.96b	0.42b	0.19b	
YO10	7.29	3.26	89.45	20	5.8	4.1	0.165	110	5	180	6.16b	2.28b	0.50b	0.32b	
YO11	5.2	3.74	91.06	18	6.2	1.72	0.085	52	2	52	0.70b	1.82b	1.19b	0.08b	
YO12	1.82	1.45	96.72	6	6	1.14	0.05	35	3	61	2.09b	0.43b	0.12b	0.12b	
YO13	1.51	4.17	94.32	6	5.5	1.34	0.073	52	3	100	1.51b	0.29b	0.17b	0.18b	

Particle Sizing (% clay, silt, sand) Hydrometer method was used to determine % sand, silt and clay. Day, P.R. 1965. Particle Fractionation and particle-size analysis. p545-567. In C.A. Black (ed) Methods of Soil analysis. Part 1. Agron.Monogr. 9. ASA and SSSA, Maddison, WI. Gec, G.W., and Bauder, J.W. 1986 Particle-size analysis. P383-411. In A Klute (ed) Methods of Soil analysis. Part 1. Agron.Monogr. 9. ASA and SSSA, Maddison, WI

EC (1:5) mS/m Measured by conductivity meter at 25° C on a 1:5 extract of soil and deionised water.

Rayment, G.E. & Higginson, F.R. (1992) Electrical Conductivity. In: Australian Laboratory Handbook of Soil and Water Chemical Methods. Inkata Press, Melbourne pp 15-16. (Method 3A1).

pH pH (H₂O) measured by pH meter on a 1:5 extract of soil in deionised water.

Rayment, G.E. & Higginson, F.R. (1992) Soil pH. In: Australian Laboratory Handbook of Soil and Water Chemical Methods. Inkata Press, Melbourne pp 17-18. (Method 4A1).

C (%) Determined by the method of Walkley and Black. Walkley, A., and Black, I.A. (1934). An examination of the Degtjareff method for determining soil organic matter and a proposed modification of the chromic acid titration method. Soil Science 37: 29-38.

Tot_N (%) Total Nitrogen measured by Kjeldahl digestion of soil. Rayment, G.E. & Higginson, F.R. (1992) Soil pH. In: Australian Laboratory Handbook of Soil and Water Chemical Methods. Inkata Press, Melbourne pp 41-43. (Method 7A2).

Tot_P (%) Total Phosphorus measured by colorimetry on the Kjeldahl digest for total N using a modification of the Murphy & Riley molybdenum

blue procedure. Murphy, J. & Riley, J.P. (1962). A modified single solution method for the determination of phosphate in natural waters *Analytica Chimica Acta* 27: 31-36.

P P (HCO_3) ppm Extracted in 0.5M NaHCO_3 (1:100) using the procedure of Colwell.

Colwell, J.D. (1963). The estimation of phosphorus fertilizer requirements on wheat in southern New South Wales, by soil analysis. *Australian Journal of Agriculture and Animal Husbandry* 3: 190-197.

K K (HCO_3) ppm Extracted in 0.5M NaHCO_3 (1:100) using the procedure of Jefferey. Jefferey R. (1982). Measurement of Potassium in 0.5M NaHCO_3 extracts of soil by flame AAS. Annual Technical Report No. 2, Agricultural Chemistry Laboratory, Government Chemical Laboratories, Western Australia.

Exchangeable Cations: Ca, Mg, Na, K (me%) Measured by inductively coupled plasma - atomic emission spectrophotometry (ICP-AES).

Soluble salts were removed from soils with EC (1:5) >20 mS/m by washing with glycol-ethanol. Cations were analysed using one of three extraction methods:

- a) 1M NH_4Cl at pH 7.0 - Used for neutral soils (pH between 6.5 & 8.0). Rayment, G.E. & Higginson, F.R. (1992) Ion-exchange Properties. In: *Australian Laboratory Handbook of Soil and Water Chemical Methods*. Inkata Press, Melbourne pp 138-145. (Method 15A1, 15A2).
- b) 0.1M BaCl_2 (unbuffered) - Used for acidic soils only (pH <6.5). Unpublished WA Agricultural Chemistry Laboratory procedure. Cations (Ca, Na, K & Mg) were measured by ICP-AES.
- c) 1M NH_4Cl at pH 8.5 - Used for calcareous soils. Modified method from Rayment, G.E. & Higginson, F.R. (1992) Ion-exchange Properties. In: *Australian Laboratory Handbook of Soil and Water Chemical Methods*. Inkata Press, Melbourne pp 148-154. (Method 15C1).

Gypsum: The method for gypsum is an "in house" procedure in which the sample is extracted with dilute hydrochloric acid and then analysed by *Inductively Coupled Plasma - Atomic Emission Spectroscopy* (ICP-AES) for sulphur. Gypsum is calculated from the sulphur content. It is possible that the extract dissolves non-gypsum forms of sulphur such as alunite, but we check this by calculating gypsum calculated from the calcium concentration (assuming there is no lime!). The extraction procedure is based on the following Australian Standard: Standard test methods for chemical analysis of gypsum and gypsum products. *ASTM C 471 - 87, 1988 Annual Book of ASTM Standards, Volume 04.01*. ie the method can be considered as a modification of the ASTM method in which sulphur is measured by ICP-AES rather than gravimetry.

Quadrat	Tann	Tdir	isoT	Tseas	mxTwmP	mnTcP	T_ar	TwetQ	TdryQ	TwmQ	TcldQ	Pann	PweP	PdryP	Pseas	PwetQ	PwmQ	PcldQ
WH07	17.9	13.4	0.47	1.91	33.9	5.7	28.2	12.5	23.1	24.8	11.4	328	59	11	65	158	38	155
WH08	17.7	13.3	0.47	1.9	33.6	5.6	28	12.3	22.9	24.6	11.2	335	61	11	65	162	38	159
WH09	17.6	13.3	0.47	1.91	33.6	5.6	28.1	12.3	22.9	24.6	11.1	336	61	11	65	162	39	159
WH10	17.7	13.3	0.47	1.91	33.7	5.6	28.1	12.3	22.9	24.6	11.2	335	61	11	65	162	38	159
WH11	17.7	13.3	0.47	1.91	33.7	5.6	28.1	12.3	22.9	24.6	11.2	330	59	11	64	158	38	155
WH12	18.1	13.4	0.47	1.92	34.1	5.8	28.3	12.6	23.4	25.1	11.5	308	55	11	61	145	38	142
WH13	17.8	13.3	0.47	1.93	33.8	5.5	28.3	12.2	23.1	24.8	11.1	325	58	11	62	154	39	150
WK01	15.4	13.2	0.5	1.7	30.8	4.5	26.3	10.7	21.5	21.5	9.7	429	75	11	66	207	40	204
WK02	15.8	13.3	0.5	1.69	31.2	4.7	26.4	11.1	21.9	21.9	10.1	390	67	11	63	184	39	179
WK03	15.7	13.4	0.5	1.71	31.2	4.5	26.6	10.9	21.9	21.9	9.9	388	67	11	63	183	39	178
WK04	15.7	13.4	0.5	1.72	31.2	4.5	26.7	10.9	21.9	21.9	9.9	387	67	11	63	183	40	178
WK05	15.6	13.4	0.5	1.73	31.2	4.4	26.8	10.8	21.9	21.9	9.8	382	66	12	61	178	40	173
WK06	15.7	13.5	0.5	1.72	31.2	4.4	26.9	10.9	21.9	21.9	9.9	372	63	12	59	171	41	166
WK07	15.8	13.6	0.5	1.76	31.6	4.4	27.2	10.9	20.6	22.2	9.9	407	77	0	71	204	36	201
WK08	15.8	13.6	0.5	1.77	31.6	4.4	27.2	10.9	20.6	22.2	9.9	407	78	0	71	204	36	201
WK09	15.3	13.4	0.5	1.78	31.1	4	27.1	10.4	20.2	21.8	9.4	424	81	0	71	212	38	208
WK10	15.4	13.4	0.5	1.78	31.2	4.1	27.1	10.5	20.2	21.8	9.5	423	80	0	71	212	38	208
WK11	15.6	13.5	0.5	1.78	31.4	4.2	27.2	10.7	20.4	22	9.7	414	79	0	71	208	37	204
WK12	15.3	13.2	0.5	1.72	30.8	4.3	26.5	10.6	20	21.5	9.6	427	76	11	67	207	39	204
WK13	15.7	13.5	0.5	1.72	31.3	4.4	26.9	10.9	21.9	21.9	9.9	372	63	12	59	171	41	166
WU01	18.7	14.5	0.48	2	35.5	5.5	30	12.8	24.1	25.9	11.7	316	61	0	67	154	37	151
WU02	18.5	14.2	0.48	1.97	35.2	5.6	29.5	12.8	23.8	25.6	11.7	319	62	0	68	157	35	154
WU03	18.5	14.2	0.48	1.97	35.1	5.6	29.5	12.7	23.8	25.6	11.6	321	62	0	68	158	35	155
WU04	18.4	14.1	0.48	1.98	35.1	5.5	29.5	12.6	23.7	25.5	11.6	321	62	0	67	157	36	154
WU05	18.4	14.1	0.48	1.98	35.1	5.5	29.5	12.6	23.7	25.5	11.6	320	62	0	67	157	36	154
WU06	18.5	14	0.48	1.96	35	5.7	29.3	12.7	23.8	25.5	11.7	316	61	0	67	155	35	151
WU07	18.9	14.2	0.48	1.98	35.5	5.9	29.6	13.1	24.3	26	12	297	56	0	65	144	34	139
WU08	19.1	14.3	0.48	1.99	35.7	5.8	29.8	13.2	21.4	26.2	12.1	292	55	0	64	140	35	135
WU09	19	14.3	0.48	2.02	35.7	5.6	30.1	13	21.4	26.3	11.9	294	54	0	62	139	37	134
WU10	18.9	14.2	0.48	1.98	35.5	5.9	29.6	13.1	24.3	26	12	297	56	0	65	144	34	139
WU11	18.3	13.7	0.47	1.97	34.7	5.6	29.1	12.5	23.7	25.4	11.4	315	59	0	65	152	37	148
WU12	18.1	13.9	0.48	1.91	34.5	5.7	28.8	12.6	23.2	25	11.6	350	68	0	71	176	36	174
WU13	18.6	14.1	0.48	1.93	35	5.9	29.1	13	23.7	25.5	11.9	324	63	0	69	162	34	159
YO01	16.8	14	0.5	1.83	32.8	4.9	28	11.7	21.8	23.5	10.7	399	78	0	74	204	34	203
YO02	16.8	14	0.5	1.83	32.8	4.9	28	11.7	21.8	23.5	10.7	399	78	0	74	204	34	203
YO03	16	13.2	0.5	1.75	31.4	4.8	26.6	11.2	20.6	22.3	10.2	596	120	10	82	320	38	317
YO04	16.4	13.4	0.5	1.73	31.7	5.1	26.6	11.6	22.6	22.6	10.6	586	119	0	83	317	37	315
YO05	16.2	13.5	0.5	1.75	31.7	4.9	26.9	11.3	20.9	22.6	10.4	539	108	0	81	289	37	288
YO06	16.3	13.2	0.5	1.72	31.5	5.2	26.3	11.5	22.5	22.5	10.6	632	129	10	84	342	38	341
YO07	16.3	13.3	0.5	1.72	31.6	5.1	26.4	11.5	22.6	22.6	10.6	610	124	0	83	330	38	329
YO08	16	13.2	0.5	1.76	31.4	4.8	26.6	11.2	20.6	22.4	10.2	590	118	10	82	317	38	312
YO09	16.4	13.3	0.5	1.72	31.6	5.2	26.4	11.6	22.7	22.7	10.7	613	125	0	84	332	37	330
YO10	16.4	13.6	0.5	1.8	32.2	4.8	27.3	11.4	21.2	23	10.4	517	102	0	80	275	36	272
YO11	16.3	13.5	0.49	1.8	32	4.8	27.2	11.3	21.1	22.8	10.3	534	106	10	80	285	37	282
YO12	16.3	13.4	0.49	1.8	32	4.8	27.2	11.3	21.1	22.8	10.3	546	109	10	81	291	37	289
YO13	16.3	13.4	0.49	1.8	32	4.8	27.1	11.3	21.1	22.8	10.3	553	111	10	81	296	37	293

1. Annual Mean Temperature (°C) **Tann** The mean of all the weekly mean temperatures. Each weekly mean temperature is the mean of that week's maximum and minimum temperature.
2. Mean Diurnal Range. (°C) **Tdir** The mean of all the weekly diurnal temperature ranges. Each weekly diurnal range is the difference between that week's maximum and minimum temperature.
3. Isothermality. **isoT** The mean diurnal range (parameter 2) divided by the Annual Temperature Range (parameter 7).
4. Temperature Seasonality. **Tseas** The temperature Coefficient of Variation (C of V) is the standard deviation of the weekly mean temperatures expressed as a percentage of the mean of those temperatures (i.e. the annual mean). For this calculation, the mean in degrees Kelvin is used. This avoids the possibility of having to divide by zero, but does mean that the values are usually quite small.
5. Maximum Temperature of Warmest Period. (°C) **mxTwmP** The highest temperature of any weekly maximum temperature.
6. Minimum Temperature of Coldest Period. (°C) **mnTcP** The lowest temperature of any weekly minimum temperature.
7. Temperature Annual Range. (°C) **T_ar** The difference between the Max Temperature of Warmest Period and the Min Temperature of Coldest Period.
8. Mean Temperature of Wettest Quarter. (°C) **TwetQ** The wettest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated.
9. Mean Temperature of Driest Quarter. (°C) **TdryQ** The driest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated.
10. Mean Temperature of Warmest Quarter (°C). **TwmQ** The warmest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated.

11. Mean Temperature of Coldest Quarter. (°C) **TcldQ** The coldest quarter of the year is determined (to the nearest week), and the mean temperature of this period is calculated.
12. Annual Precipitation. (mm) **Pann** The sum of all the monthly precipitation estimates.
13. Precipitation of Wettest Period. (mm) **PwetP** The precipitation of the wettest week or month, depending on the time step.
14. Precipitation of Driest Period. (mm) **PdryP** The precipitation of the driest week or month, depending on the time step.
15. Precipitation Seasonality. **Pseas** The Coefficient of Variation (C of V) is the standard deviation of the weekly precipitation estimates expressed as a percentage of the mean of those estimates (i.e. the annual mean).
16. Precipitation of Wettest Quarter. (mm) **PwetQ** The wettest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated.
18. Precipitation of Warmest Quarter. (mm) **PwmQ** The warmest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated.
19. Precipitation of Coldest Quarter. (mm) **PcldQ** The coldest quarter of the year is determined (to the nearest week), and the total precipitation over this period is calculated.

Table 3. Landform attributes, salinity scores and vegetation attributes. Scoring methods are described at the foot of the table.

Quadrat	LF	SAL	Salttype	Drainage	Slope	Tcov	Scov	Hcov	Gstuf	HCS	Longitude	Latitude	Elevation
BE01	10	1	1	5	1	0	3	0	2	5	118.3029	-30.2376	448
BE02	12	1	1	4	2	1	3	0	3	7	118.3364	-30.2384	455
BE03	6	1	1	5	2	1	2	3	3	9	118.4275	-30.634	410
BE04	5	2	1	4	1	1	3	2	1	7	118.4834	-30.6338	351
BE05	3	1	1	5	1	1	3	0	3	7	118.4772	-30.6609	340
BE06	3	4	2	2	1	1	0	2	1	4	117.9075	-30.5956	373
BE07	6	1	1	2	1	0	3	1	2	6	117.5654	-30.5467	364
BE08	3	1	1	4	1	1	2	1	1	5	117.5791	-30.5304	341
BE09	10	1	1	5	1	1	3	0	3	7	117.5638	-30.5309	356
BE10	3	3	2	1	0	3	3	1	7	117.5648	-30.5284	354	
BE11	2	4	3	3	1	0	2	3	1	6	117.4954	-30.3338	306
BE12	6	1	1	5	1	2	3	3	2	10	117.7534	-30.3311	384
BE13	3	2	1	4	1	2	1	0	3	6	117.758	-30.3487	381
DA01	7	2	1	5	2	1	3	1	3	8	116.6186	-33.3561	295
DA02	7	4	2	3	1	0	2	1	1	4	116.6178	-33.3572	295
DA03	5	1	1	3	1	1	1	3	3	8	116.8061	-33.3131	252
DA04	12	1	1	5	1	1	1	1	3	6	116.6333	-33.4703	302
DA05	7	3	1	2	1	1	0	3	2	6	116.8867	-33.4881	229
DA06	11	1	1	3	2	1	1	2	2	6	116.9483	-33.5017	214
DA07	3	4	2	2	1	2	2	2	1	7	116.9528	-33.5006	214
DA08	11	1	1	6	2	1	2	1	3	7	116.9386	-33.6469	246
DA09	7	1	1	4	2	1	2	1	3	7	116.94	-33.6497	247
DA10	12	1	1	5	3	1	1	1	2	5	116.6275	-33.6058	312
DA11	6	1	1	3	3	3	0	2	3	8	116.7719	-33.2981	343
DA12	9	1	1	6	1	1	1	2	3	7	116.5806	-33.6203	311
DA13	5	1	1	2	2	2	0	2	3	7	116.9886	-33.8417	272
DN01	9	1	1	4	1	0	2	2	1	5	115.9843	-30.3714	227
DN02	6	1	1	4	2	0	2	1	1	4	116.0187	-30.2586	300
DN03	10	1	1	5	1	1	2	1	2	6	116.0316	-30.1881	264
DN04	5	2	1	3	1	2	2	2	2	8	115.9594	-30.1558	245
DN05	9	1	1	6	1	0	2	0	1	3	115.9011	-30.0114	230
DN06	4	2	2	4	1	2	1	0	1	4	115.9198	-30.0622	234
DN07	3	3	1	4	1	1	2	0	2	5	115.8858	-30.0101	230
DN08	10	1	1	5	1	0	2	1	2	5	115.7926	-30.1376	279
DN09	8	1	1	5	1	1	2	0	2	5	115.7344	-30.1919	294
DN10	11	1	1	6	1	1	2	1	2	6	115.569	-30.0718	316
DN11	9	1	1	6	1	0	2	1	2	5	115.5536	-30.0304	327
DN12	11	1	1	4	2	0	2	0	2	4	115.5633	-30.0305	325
DU01	6	1	1	3	3	2	0	3	3	8	117.4253	-33.2322	330
DU02	5	2	1	4	2	1	1	2	2	6	117.7819	-33.0853	340
DU03	7	1	1	3	2	1	1	1	2	5	117.6956	-33.0772	423
DU04	9	1	1	5	1	1	2	1	2	6	117.6842	-33.05	399
DU05	2	4	2	2	1	0	1	0	1	2	117.6444	-33.3581	265
DU06	3	4	2	2	1	1	1	1	3	6	117.6419	-33.3789	272
DU07	3	4	2	2	1	1	1	1	2	5	117.855	-33.7186	281
DU08	3	4	2	1	1	0	3	2	2	7	117.865	-33.72	281
DU09	3	2	1	3	1	1	2	1	3	7	118.1158	-33.4522	305
DU10	3	2	1	3	1	1	0	0	3	4	118.2594	-33.3361	367
DU11	8	1	1	3	1	1	1	0	3	5	118.2594	-33.3425	363
DU12	11	1	1	6	1	1	1	1	3	6	118.3142	-33.3575	352
DU13	10	1	1	6	1	1	1	0	1	3	118.4208	-33.5419	289
ES01	9	1	1	5	2	0	3	2	2	7	121.8153	-33.7469	88
ES02	11	1	1	5	1	1	2	2	3	8	121.7972	-33.7283	96
ES03	1	2	1	3	1	2	1	1	3	7	121.8081	-33.7192	103
ES04	3	4	2	1	1	1	1	1	1	4	122.0139	-33.6383	92
ES05	7	1	1	3	1	1	1	1	3	6	121.9711	-33.4886	175
ES06	2	4	3	2	1	0	2	1	1	4	122.0139	-33.4697	151
ES07	8	1	1	4	1	1	1	1	2	5	122.1214	-33.4747	195
ES08	6	1	1	2	1	1	2	2	3	8	122.1406	-33.4583	271
ES09	3	1	1	4	1	1	2	1	2	6	122.2408	-33.4847	148
ES10	3	4	2	2	1	1	2	1	1	5	122.2986	-33.5672	156
ES11	10	1	1	6	2	1	2	2	2	7	122.2972	-33.7314	115
ES12	1	2	1	1	1	1	0	3	1	5	122.2997	-33.7314	113
ES13	1	2	1	2	1	1	1	1	3	6	122.2914	-33.7358	110
GP01	11	1	1	4	1	1	2	1	2	6	120.8725	-33.3483	257
GP02	6	1	1	4	2	0	2	2	2	6	120.9953	-33.3669	242
GP03	4	2	1	5	1	1	1	0	2	4	121.0964	-33.2578	229
GP04	3	1	1	5	1	2	1	1	3	7	121.0008	-33.1586	231
GP05	2	4	3	1	1	0	2	0	1	3	120.9694	-33.1625	233
GP06	10	1	1	6	1	1	1	1	2	5	121.1931	-33.1128	237
GP07	3	4	3	3	1	1	2	0	2	5	121.3022	-33.2056	191
GP08	3	1	1	3	1	1	1	1	3	6	121.5822	-33.3858	179
GP09	3	2	1	4	1	1	1	0	2	4	121.5592	-33.5172	143
GP10	9	1	1	4	1	1	2	1	2	6	121.4669	-33.5089	144
GP11	1	2	1	2	1	1	2	1	3	7	121.2503	-33.4536	166
GP12	3	1	1	3	1	1	3	0	2	6	121.2361	-33.4753	171
GP13	11	1	1	5	1	1	2	2	3	8	121.0656	-33.7225	76
HY01	7	2	1	4	1	1	3	0	2	6	118.9944	-32.6319	391
HY02	2	4	3	1	1	0	1	0	0	1	119.4111	-32.7658	313

Quadrat	LF	SAL	Saltype	Drainage	Slope	Tcov	Scov	Hcov	Gstuf	HCS	Longitude	Latitude	Elevation
UN09	12	1	1	4	1	2	2	1	3	8	116.8633	-34.4011	292
UN10	9	1	1	6	3	1	3	3	3	10	116.8792	-34.4294	237
UN11	9	1	1	6	1	1	3	0	2	6	116.6817	-34.4431	176
UN12	3	2	1	2	1	1	2	2	1	6	116.6683	-34.4206	182
UN13	2	4	3	1	1	0	2	1	1	4	116.6456	-34.4453	181
WH01	3	3	3	2	1	2	1	3	2	8	116.6582	-30.9523	246
WH02	3	4	2	1	1	0	2	3	1	6	116.6417	-30.9413	243
WH03	11	1	1	2	1	0	2	1	2	5	116.7203	-30.8631	317
WH04	12	1	1	3	2	1	3	0	3	7	116.661	-30.8364	331
WH05	7	1	1	3	1	1	2	0	1	4	117.0482	-30.7632	324
WH06	3	1	1	4	1	1	1	2	1	5	117.0901	-30.7578	328
WH07	3	1	1	3	1	1	1	1	2	5	117.0826	-30.8198	333
WH08	9	2	1	3	1	0	3	3	1	7	117.0961	-30.9143	361
WH09	10	1	1	5	1	1	2	1	1	5	117.0963	-30.8927	367
WH10	8	1	1	3	1	1	1	0	3	5	117.0881	-30.8924	359
WH11	5	1	1	4	2	2	0	2	3	7	117.1517	-30.9158	353
WH12	3	4	2	2	1	0	3	1	0	4	117.3224	-30.8019	310
WH13	6	1	1	3	2	0	1	1	1	3	117.2423	-30.7537	379
WK01	6	1	1	1	2	1	2	1	1	5	117.3467	-32.9247	360
WK02	2	4	2	1	1	2	2	2	2	8	117.5383	-32.9836	301
WK03	1	4	2	1	1	1	0	2	1	4	117.6158	-32.9181	332
WK04	3	4	2	1	1	1	2	1	2	6	117.645	-32.89	342
WK05	3	3	1	4	1	1	1	1	3	6	117.7581	-32.8903	355
WK06	11	1	1	2	1	0	2	1	1	4	117.8944	-32.9117	344
WK07	5	1	1	4	3	2	0	1	3	6	117.2758	-32.545	335
WK08	7	2	1	3	1	1	1	2	2	6	117.2806	-32.5414	340
WK09	12	1	1	2	3	0	2	1	3	6	117.3442	-32.5594	433
WK10	9	1	1	6	3	1	1	0	1	3	117.3342	-32.5547	423
WK11	8	2	1	3	3	1	1	1	3	6	117.32	-32.535	383
WK12	4	3	1	3	1	2	0	1	2	5	117.3586	-32.8381	389
WK13	9	1	1	3	1	0	2	1	2	5	117.8939	-32.9056	345
WU01	5	1	1	3	2	1	0	3	2	6	116.5612	-29.7358	349
WU02	5	1	1	2	1	1	1	3	1	6	116.5821	-29.9748	337
WU03	6	1	1	3	1	1	1	2	3	7	116.5861	-29.9717	349
WU04	11	1	1	6	1	0	1	1	1	3	116.6216	-29.9789	362
WU05	12	1	1	2	1	0	2	0	3	5	116.627	-29.9742	362
WU06	11	1	1	3	1	1	3	1	3	8	116.6773	-30.0587	342
WU07	4	3	2	3	1	0	1	2	1	4	116.8191	-30.0047	283
WU08	2	4	3	1	1	0	1	1	0	2	116.8863	-29.9361	275
WU09	4	1	1	4	1	1	1	2	2	6	116.9558	-29.8317	305
WU10	4	2	1	3	1	1	2	2	3	8	116.8217	-30.0084	284
WU11	7	1	1	4	1	2	2	1	1	6	116.9433	-30.2183	371

Quadrat	LF	SAL	Saltype	Drainage	Slope	Tcov	Scov	Hcov	Gstuf	HCS	Longitude	Latitude	Elevation
WU12	10	1	1	6	1	1	1	2	2	6	116.4556	-30.3019	322
WU13	3	4	2	1	1	0	1	2	1	4	116.5217	-30.1662	279
YO01	4	2	1	4	1	1	0	2	1	4	117.0238	-31.9931	249
YO02	5	2	1	4	1	1	0	1	2	4	117.0221	-31.9932	247
YO03	3	2	1	3	1	1	1	2	2	6	116.5681	-32.094	336
YO04	9	1	1	6	1	1	1	2	3	7	116.554	-32.1416	253
YO05	8	1	1	4	1	1	1	0	3	5	116.6406	-32.1521	283
YO06	11	1	1	3	3	1	1	2	2	6	116.5056	-32.1271	267
YO07	10	1	1	6	3	1	1	1	2	5	116.5305	-32.1414	262
YO08	12	1	1	3	3	1	2	1	2	6	116.5652	-32.0441	344
YO09	1	2	1	2	1	2	1	2	2	7	116.5144	-32.1123	251
YO10	7	1	1	3	3	1	1	0	3	5	116.639	-31.9005	309
YO11	3	3	2	3	1	1	0	2	1	4	116.6237	-31.8962	335
YO12	10	1	1	6	2	1	1	1	2	5	116.6025	-31.8752	337
YO13	6	1	1	6	3	2	1	1	3	7	116.5883	-31.8838	332

1. Landform (LF) in 12 categories -- see Figure 2.

2. Salinity Risk (SAL). Salinity Risk Categories in the table below are modified slightly from page 22 in: van Gool and Moore (1999). Land Evaluation Standards for Land Resource Mapping, 2nd Edition Resource Management Technical Report 181. Agriculture W.A., Perth. Also note that the salinity risk ratings have been estimated in the absence of information on the depth and salinity of groundwaters, the rate of change in depth of any groundwaters present, and prior to the availability of salinity data from soil samples collected at each quadrat site.

Salinity Risk	Description
None (1)	High positions in the landscape such as upland lateritic residuals. Salinity will not develop because of the elevated position, low watertables, high permeability, and/or the low salt store in the regolith.
Partial or low (2)	Areas with small variation in local relief and geology where rising watertables may not effect all the land area (all of the site), or where rising watertables are not currently saline, and the salt store in the regolith is low. Low risk areas may include sandy rises on valley floors or near incised stream channels, lower footslopes or where saline seeps occur.
High (3)	Salinity already present in limited areas of the quadrat or high hazard from shallow saline groundwater that is close to the surface with a rising trend.
Saline land (4)	Obviously salt affected areas (entire quadrat is usually salt affected). All saltflat quadrats are included in this class even though they are 'naturally' saline and some are now hypersaline in parts.

3. Salinity type (Saltype): 1 = not saline, 2 = secondary salinity, 3 = primary salinity. A subjective assessment of whether the quadrat is not saline, recently became saline or was originally (naturally) saline, respectively.

4. Drainage Rating applies the rating criteria developed in "The Australian Soil and Land Survey Handbook" McDonald et al (1990) 2^d Ed. Inkata Press. See details below extracted from pages 151,152 of that publication. The ratings are:

Very poorly drained water is removed from the soil so slowly that the watertable remains at or near the surface for most of the year.

Poorly drained water is removed very slowly in relation to supply. A perched watertable may be present. All horizons remain wet for periods of several months.

Imperfectly drained water is removed only slowly in relation to supply. Some horizons are wet for periods of several weeks.

Moderately well drained water is removed from the soil somewhat slowly in relation to supply, due to low permeability, shallow watertable, lack of gradient, or some combination of these. Some horizons may remain wet for as long as one week after water addition.

Well drained water is removed from the soil readily but not rapidly. Some horizons may remain wet for several days after water addition.

Rapidly drained water is removed from the soil rapidly in relation to supply. No horizon is usually wet for more than several hours after water addition.

5. Slope rating Slope ratings use the slope classes described in "The Australian Soil & Land Survey Handbook" McDonald et al (1990) Details are:

Slope Class	1. Level	2. Very gently inclined	3. Gently inclined	4. Moderately inclined	5. Steep
Slope Values % (approx)	under 1 %	1 - 3 %	3 - 10 %	10 - 32 %	32 - 56 %

6-10. Habitat Complexity. Adaptation of Newsome and Catling (1979) method for scoring habitat complexity.

Structure	Score			
	0	1	2	3
Tree Canopy (%) (Tcov)	0	<30	30-70	>70
Shrub Cover (%) (Scov)	0	<30	30-70	>70
Ground Herbs (Hcov)	Sparse < 0.5m	Sparse > 0.5m	Dense < 0.5m	Dense > 0.5m
Logs, Rocks, debris etc. (Gstuf)	0	<30	30-70	>70
Habitat Complexity Score (HCS)	Sum of Scores			

11-13. Longitude (°E), Latitude (°S) and Elevation (m). (AGD66)

Appendix 2. Significant Spearman Rank Order Correlations between environmental variables, for the 252 sites included in the analysis of vertebrate biogeographic patterns. Only correlations with $p < 0.05$ are shown.

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
A_horizo & A_horizo				adjSAL & GrndStuf	252	-0.216	0.001	Dist_cst & A_horizo	242	-0.152	0.018
A_horizo & adjSAL	242	-0.284	0.000	adjSAL & HCS	252	-0.191	0.002	Dist_cst & adjSAL	252	0.145	0.022
A_horizo & Clay	237	-0.244	0.000	adjSAL & Impedenc	251	0.216	0.001	Dist_cst & Clay	246	0.202	0.001
A_horizo & Dist_cst	242	-0.152	0.018	adjSAL & K	252	0.458	0.000	Dist_cst & Dist_cst			
A_horizo & Drainage	242	0.602	0.000	adjSAL & LF	252	-0.599	0.000	Dist_cst & Elev	252	0.726	0.000
A_horizo & EC	242	-0.393	0.000	adjSAL & logEC	252	0.448	0.000	Dist_cst & expSand	246	-0.206	0.001
A_horizo & Ex_Ca	242	-0.291	0.000	adjSAL & Long	252	0.144	0.023	Dist_cst & GrndStuf	252	-0.153	0.015
A_horizo & Ex_K	242	-0.546	0.000	adjSAL & P	252	0.380	0.000	Dist_cst & HCS	252	-0.211	0.001
A_horizo & Ex_Mg	242	-0.470	0.000	adjSAL & pH	252	0.366	0.000	Dist_cst & Isotherm	252	-0.710	0.000
A_horizo & Ex_Na	242	-0.406	0.000	adjSAL & PrecAnnu	252	-0.147	0.020	Dist_cst & K	252	0.158	0.012
A_horizo & expSand	237	0.460	0.000	adjSAL & PrecSeas	252	-0.132	0.037	Dist_cst & Lat	252	-0.190	0.002
A_horizo & Impedenc	242	0.264	0.000	adjSAL & PrecWetQ	252	-0.154	0.014	Dist_cst & Long	252	0.233	0.000
A_horizo & K	242	-0.543	0.000	adjSAL & Saltyp	252	0.563	0.000	Dist_cst & MnT_CP	252	-0.653	0.000
A_horizo & LF	242	0.331	0.000	adjSAL & Sand	246	-0.292	0.000	Dist_cst & MTDiuRng	252	0.521	0.000
A_horizo & logEC	242	-0.393	0.000	adjSAL & ShrubCov	252	-0.231	0.000	Dist_cst & MTDryQtr	252	0.266	0.000
A_horizo & Long	242	-0.175	0.006	adjSAL & Silt	246	0.289	0.000	Dist_cst & MTWrmQtr	252	0.340	0.000
A_horizo & OrgC	242	-0.222	0.000	adjSAL & Slope	252	-0.184	0.003	Dist_cst & MxT_WP	252	0.422	0.000
A_horizo & P	242	-0.229	0.000	adjSAL & Total_N	252	0.174	0.005	Dist_cst & OrgC	252	-0.151	0.016
A_horizo & pH	242	-0.304	0.000	adjSAL & Total_P	252	0.354	0.000	Dist_cst & PrecAnnu	252	-0.668	0.000
A_horizo & PrecAnnu	242	0.168	0.009	Clay & A_horizo	237	-0.244	0.000	Dist_cst & PrecSeas	252	-0.221	0.000
A_horizo & PrecSeas	242	0.169	0.008	Clay & adjSAL	246	0.154	0.016	Dist_cst & PrecWetQ	252	-0.526	0.000
A_horizo & PrecWetQ	242	0.207	0.001	Clay & Clay				Dist_cst & PrecWrmQ	252	-0.339	0.000
A_horizo & Saltyp	242	-0.134	0.037	Clay & Dist_cst	246	0.202	0.001	Dist_cst & Sand	246	-0.206	0.001
A_horizo & Sand	237	0.461	0.000	Clay & EC	246	0.150	0.019	Dist_cst & ShrubCov	252	-0.166	0.008
A_horizo & Silt	237	-0.502	0.000	Clay & Ex_Ca	246	0.189	0.003	Dist_cst & Silt	246	0.143	0.025
A_horizo & Total_N	242	-0.307	0.000	Clay & Ex_K	246	0.336	0.000	Dist_cst & Temp_AR	252	0.641	0.000
A_horizo & Total_P	242	-0.289	0.000	Clay & Ex_Mg	246	0.265	0.000	Dist_cst & Total_P	252	0.132	0.037
adjSAL & A_horizo	242	-0.284	0.000	Clay & Ex_Na	246	0.143	0.025	Drainage & A_horizo	242	0.602	0.000
adjSAL & adjSAL				Clay & expSand	246	-0.778	0.000	Drainage & adjSAL	252	-0.437	0.000
adjSAL & Clay	246	0.154	0.016	Clay & K	246	0.331	0.000	Drainage & Drainage			
adjSAL & Dist_cst	252	0.145	0.022	Clay & logEC	246	0.150	0.019	Drainage & EC	252	-0.464	0.000
adjSAL & Drainage	252	-0.437	0.000	Clay & P	246	0.164	0.010	Drainage & Ex_Ca	252	-0.263	0.000
adjSAL & EC	252	0.448	0.000	Clay & PrecAnnu	246	-0.213	0.001	Drainage & Ex_K	252	-0.496	0.000
adjSAL & Ex_Ca	252	0.226	0.000	Clay & PrecSeas	246	-0.143	0.025	Drainage & Ex_Mg	252	-0.468	0.000
adjSAL & Ex_K	252	0.430	0.000	Clay & PrecWetQ	246	-0.196	0.002	Drainage & Ex_Na	252	-0.493	0.000
adjSAL & Ex_Mg	252	0.450	0.000	Clay & Sand	246	-0.778	0.000	Drainage & expSand	246	0.291	0.000
adjSAL & Ex_Na	252	0.411	0.000	Clay & Silt	246	0.255	0.000	Drainage & Impedenc	251	0.269	0.000
adjSAL & expSand	246	-0.292	0.000	Clay & Total_N	246	0.193	0.002	Drainage & K	252	-0.523	0.000
				Clay & Total_P	246	0.238	0.000	Drainage & LF	252	0.529	0.000

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
Drainage & logEC	252	-0.464	0.000	Elev & Dist_cst	252	0.726	0.000	Ex_Ca & MTDiuRng	252	-0.232	0.000
Drainage & OrgC	252	-0.167	0.008	Elev & EC	252	-0.137	0.029	Ex_Ca & MTDryQtr	252	-0.208	0.001
Drainage & P	252	-0.291	0.000	Elev & Elev				Ex_Ca & MTWetQtr	252	-0.270	0.000
Drainage & pH	252	-0.299	0.000	Elev & GrndHerb	252	-0.161	0.010	Ex_Ca & MTWrmQtr	252	-0.266	0.000
Drainage & Saltyp	252	-0.378	0.000	Elev & HCS	252	-0.125	0.048	Ex_Ca & MxT_WP	252	-0.256	0.000
Drainage & Sand	246	0.292	0.000	Elev & Impedenc	251	-0.126	0.047	Ex_Ca & OrgC	252	0.727	0.000
Drainage & ShrubCov	252	0.156	0.013	Elev & Isotherm	252	-0.557	0.000	Ex_Ca & P	252	0.563	0.000
Drainage & Silt	246	-0.408	0.000	Elev & LF	252	0.183	0.004	Ex_Ca & pH	252	0.473	0.000
Drainage & Total_N	252	-0.319	0.000	Elev & logEC	252	-0.137	0.029	Ex_Ca & PrecAnnu	252	0.185	0.003
Drainage & Total_P	252	-0.405	0.000	Elev & Long	252	0.217	0.001	Ex_Ca & Sand	246	-0.384	0.000
Drainage & TreeCanp	252	0.148	0.019	Elev & MnT_CP	252	-0.658	0.000	Ex_Ca & ShrubCcv	252	-0.223	0.000
EC & A_horizo	242	-0.393	0.000	Elev & MTDiuRng	252	0.295	0.000	Ex_Ca & Silt	246	0.411	0.000
EC & adjSAL	252	0.448	0.000	Elev & MTWetQtr	252	-0.245	0.000	Ex_Ca & Temp_AR	252	-0.234	0.000
EC & Clay	246	0.150	0.019	Elev & MTWrmQtr	252	0.169	0.007	Ex_Ca & Total_N	252	0.781	0.000
EC & Drainage	252	-0.464	0.000	Elev & MxT_WP	252	0.235	0.000	Ex_Ca & Total_P	252	0.653	0.000
EC & EC				Elev & P	252	-0.274	0.000	Ex_Ca & TreeCanp	252	0.403	0.000
EC & Elev	252	-0.137	0.029	Elev & PrecAnnu	252	-0.411	0.000	Ex_K & A_horizo	242	-0.546	0.000
EC & Ex_Ca	252	0.612	0.000	Elev & PrecSeas	252	-0.190	0.002	Ex_K & adjSAL	252	0.430	0.000
EC & Ex_K	252	0.694	0.000	Elev & PrecWetQ	252	-0.388	0.000	Ex_K & Clay	246	0.336	0.000
EC & Ex_Mg	252	0.752	0.000	Elev & PrecWrmQ	252	-0.154	0.015	Ex_K & Drainage	252	-0.496	0.000
EC & Ex_Na	252	0.888	0.000	Elev & Saltyp	252	-0.158	0.012	Ex_K & EC	252	0.694	0.000
EC & expSand	246	-0.357	0.000	Elev & Temp_AR	252	0.425	0.000	Ex_K & Ex_Ca	252	0.723	0.000
EC & Isotherm	252	0.136	0.031	Ex_Ca & A_horizo	242	-0.291	0.000	Ex_K & Ex_K			
EC & K	252	0.674	0.000	Ex_Ca & adjSAL	252	0.226	0.000	Ex_K & Ex_Mg	252	0.848	0.000
EC & Lat	252	0.162	0.010	Ex_Ca & Clay	246	0.189	0.003	Ex_K & Ex_Na	252	0.694	0.000
EC & LF	252	-0.510	0.000	Ex_Ca & Drainage	252	-0.263	0.000	Ex_K & expSand	246	-0.644	0.000
EC & logEC	252	1.000		Ex_Ca & EC	252	0.612	0.000	Ex_K & K	252	0.952	0.000
EC & MTAnnual	252	-0.149	0.018	Ex_Ca & Ex_Ca				Ex_K & LF	252	-0.588	0.000
EC & MTDiuRng	252	-0.139	0.028	Ex_Ca & Ex_K	252	0.723	0.000	Ex_K & logEC	252	0.694	0.000
EC & MTDryQtr	252	-0.125	0.048	Ex_Ca & Ex_Mg	252	0.817	0.000	Ex_K & OrgC	252	0.452	0.000
EC & MTWrmQtr	252	-0.152	0.016	Ex_Ca & Ex_Na	252	0.585	0.000	Ex_K & P	252	0.596	0.000
EC & MxT_WP	252	-0.169	0.007	Ex_Ca & expSand	246	-0.384	0.000	Ex_K & pH	252	0.532	0.000
EC & OrgC	252	0.486	0.000	Ex_Ca & GrndHerb	252	-0.133	0.035	Ex_K & PrecAnnu	252	-0.152	0.016
EC & P	252	0.600	0.000	Ex_Ca & GrndStuf	252	0.329	0.000	Ex_K & PrecSeas	252	-0.138	0.029
EC & pH	252	0.344	0.000	Ex_Ca & HCS	252	0.171	0.007	Ex_K & PrecWetQ	252	-0.176	0.005
EC & Saltyp	252	0.442	0.000	Ex_Ca & Impedenc	251	0.128	0.043	Ex_K & Saltyp	252	0.312	0.000
EC & Sand	246	-0.356	0.000	Ex_Ca & Isotherm	252	0.151	0.016	Ex_K & Sand	246	-0.644	0.000
EC & ShrubCov	252	-0.268	0.000	Ex_Ca & K	252	0.683	0.000	Ex_K & ShrubCov	252	-0.227	0.000
EC & Silt	246	0.383	0.000	Ex_Ca & Lat	252	0.270	0.000	Ex_K & Silt	246	0.682	0.000
EC & Temp_AR	252	-0.165	0.009	Ex_Ca & LF	252	-0.399	0.000	Ex_K & Total_N	252	0.659	0.000
EC & Total_N	252	0.596	0.000	Ex_Ca & logEC	252	0.612	0.000	Ex_K & Total_P	252	0.766	0.000
EC & Total_P	252	0.555	0.000	Ex_Ca & MTAnnual	252	-0.283	0.000	Ex_K & TreeCanp	252	0.174	0.006

Attributes	Valid	Spearman	p-level
Ex_Mg & A_horizo	242	-0.470	0.000
Ex_Mg & adjSAL	252	0.450	0.000
Ex_Mg & Clay	246	0.265	0.000
Ex_Mg & Drainage	252	-0.468	0.000
Ex_Mg & EC	252	0.752	0.000
Ex_Mg & Ex_Ca	252	0.817	0.000
Ex_Mg & Ex_K	252	0.848	0.000
Ex_Mg & Ex_Mg			
Ex_Mg & Ex_Na	252	0.798	0.000
Ex_Mg & expSand	246	-0.514	0.000
Ex_Mg & GrmdStuf	252	0.162	0.010
Ex_Mg & Impedenc	251	0.153	0.015
Ex_Mg & Isotherm	252	0.132	0.037
Ex_Mg & K	252	0.809	0.000
Ex_Mg & Lat	252	0.232	0.000
Ex_Mg & LF	252	-0.559	0.000
Ex_Mg & logEC	252	0.752	0.000
Ex_Mg & MTAnnual	252	-0.217	0.001
Ex_Mg & MTDiuRng	252	-0.202	0.001
Ex_Mg & MTDryQtr	252	-0.184	0.003
Ex_Mg & MTWetQtr	252	-0.181	0.004
Ex_Mg & MTWrmQtr	252	-0.215	0.001
Ex_Mg & MxT_WP	252	-0.217	0.001
Ex_Mg & OrgC	252	0.622	0.000
Ex_Mg & P	252	0.630	0.000
Ex_Mg & pH	252	0.530	0.000
Ex_Mg & Saltyp	252	0.291	0.000
Ex_Mg & Sand	246	-0.513	0.000
Ex_Mg & ShrubCov	252	-0.229	0.000
Ex_Mg & Silt	246	0.539	0.000
Ex_Mg & Temp_AR	252	-0.198	0.002
Ex_Mg & Total_N	252	0.725	0.000
Ex_Mg & Total_P	252	0.679	0.000
Ex_Mg & TreeCanp	252	0.278	0.000
Ex_Na & A_horizo	242	-0.406	0.000
Ex_Na & adjSAL	252	0.411	0.000
Ex_Na & Clay	246	0.143	0.025
Ex_Na & Drainage	252	-0.493	0.000
Ex_Na & EC	252	0.888	0.000
Ex_Na & Ex_Ca	252	0.585	0.000
Ex_Na & Ex_K	252	0.694	0.000
Ex_Na & Ex_Mg	252	0.798	0.000

Attributes	Valid	Spearman	p-level
Ex_Na & Ex_Na			
Ex_Na & expSand	246	-0.387	0.000
Ex_Na & Isotherm	252	0.126	0.045
Ex_Na & K	252	0.680	0.000
Ex_Na & Lat	252	0.175	0.005
Ex_Na & LF	252	-0.503	0.000
Ex_Na & logEC	252	0.888	0.000
Ex_Na & MTAnnual	252	-0.180	0.004
Ex_Na & MTDiuRng	252	-0.166	0.008
Ex_Na & MTWetQtr	252	-0.158	0.012
Ex_Na & MTWrmQtr	252	-0.175	0.005
Ex_Na & MxT_WP	252	-0.191	0.002
Ex_Na & OrgC	252	0.517	0.000
Ex_Na & P	252	0.583	0.000
Ex_Na & pH	252	0.299	0.000
Ex_Na & Saltyp	252	0.366	0.000
Ex_Na & Sand	246	-0.386	0.000
Ex_Na & ShrubCov	252	-0.273	0.000
Ex_Na & Silt	246	0.431	0.000
Ex_Na & Temp_AR	252	-0.186	0.003
Ex_Na & Total_N	252	0.617	0.000
Ex_Na & Total_P	252	0.564	0.000
expSand & A_horizo	237	0.460	0.000
expSand & adjSAL	246	-0.292	0.000
expSand & Clay	246	-0.778	0.000
expSand & Dist_cst	246	-0.206	0.001
expSand & Drainage	246	0.291	0.000
expSand & EC	246	-0.357	0.000
expSand & Ex_Ca	246	-0.384	0.000
expSand & Ex_K	246	-0.644	0.000
expSand & Ex_Mg	246	-0.514	0.000
expSand & Ex_Na	246	-0.387	0.000
expSand & expSand			
expSand & Isotherm	246	0.181	0.004
expSand & K	246	-0.644	0.000
expSand & LF	246	0.323	0.000
expSand & logEC	246	-0.357	0.000
expSand & OrgC	246	-0.284	0.000
expSand & P	246	-0.343	0.000
expSand & pH	246	-0.200	0.002
expSand & PrecAnnu	246	0.214	0.001
expSand & PrecWetQ	246	0.145	0.023

Attributes	Valid	Spearman	p-level
expSand & Sand	246	1.000	0.000
expSand & Silt	246	-0.772	0.000
expSand & Temp_AR	246	-0.159	0.013
expSand & Total_N	246	-0.443	0.000
expSand & Total_P	246	-0.557	0.000
GrmdHerb & Elev	252	-0.161	0.010
GrmdHerb & Ex_Ca	252	-0.133	0.035
GrmdHerb & GrmdHerb			
GrmdHerb & HCS	252	0.515	0.000
GrmdHerb & LF	252	-0.160	0.011
GrmdHerb & Long	252	-0.233	0.000
GrmdHerb & MnT_CP	252	0.190	0.003
GrmdHerb & pH	252	-0.143	0.023
GrmdHerb & PrecSeas	252	0.170	0.007
GrmdHerb & PrecWetQ	252	0.166	0.008
GrmdHerb & Silt	246	0.166	0.009
GrmdStuf & adjSAL	252	-0.216	0.001
GrmdStuf & Dist_cst	252	-0.153	0.015
GrmdStuf & Ex_Ca	252	0.329	0.000
GrmdStuf & Ex_Mg	252	0.162	0.010
GrmdStuf & GrmdStuf			
GrmdStuf & HCS	252	0.637	0.000
GrmdStuf & Lat	252	0.257	0.000
GrmdStuf & MTAnnual	252	-0.270	0.000
GrmdStuf & MTDiuRng	252	-0.203	0.001
GrmdStuf & MTDryQtr	252	-0.180	0.004
GrmdStuf & MTWetQtr	252	-0.254	0.000
GrmdStuf & MTWrmQtr	252	-0.248	0.000
GrmdStuf & MxT_WP	252	-0.217	0.001
GrmdStuf & OrgC	252	0.452	0.000
GrmdStuf & PrecAnnu	252	0.253	0.000
GrmdStuf & PrecWetQ	252	0.138	0.029
GrmdStuf & PrecWrmQ	252	0.203	0.001
GrmdStuf & Saltyp	252	-0.324	0.000
GrmdStuf & Temp_AR	252	-0.189	0.003
GrmdStuf & Total_N	252	0.378	0.000
GrmdStuf & Total_P	252	0.134	0.033
GrmdStuf & TreeCanp	252	0.452	0.000
HCS & adjSAL	252	-0.191	0.002
HCS & Dist_cst	252	-0.211	0.001
HCS & Elev	252	-0.125	0.048
HCS & Ex_Ca	252	0.171	0.007

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
HCS & GrndHerb	252	0.515	0.000	Isotherm & expSand	246	0.181	0.004	K & Sand	246	-0.644	0.000
HCS & GrndStuf	252	0.637	0.000	Isotherm & Isotherm				K & ShrubCov	252	-0.267	0.000
HCS & HCS				Isotherm & Lat	252	0.669	0.000	K & Silt	246	0.680	0.000
HCS & Lat	252	0.165	0.009	Isotherm & logEC	252	0.136	0.031	K & Total_N	252	0.612	0.000
HCS & MnT_CP	252	0.186	0.003	Isotherm & Long	252	0.293	0.000	K & Total_P	252	0.749	0.000
HCS & MTAnnual	252	-0.144	0.023	Isotherm & MnT_CP	252	0.191	0.002	K & TreeCanp	252	0.163	0.010
HCS & MTDiuRng	252	-0.253	0.000	Isotherm & MTAnnual	252	-0.591	0.000	Lat & Dist_cst	252	-0.190	0.002
HCS & MTWrmQtr	252	-0.165	0.009	Isotherm & MTDiuRng	252	-0.707	0.000	Lat & EC	252	0.162	0.010
HCS & MxT_WP	252	-0.164	0.009	Isotherm & MTDryQtr	252	-0.684	0.000	Lat & Ex_Ca	252	0.270	0.000
HCS & OrgC	252	0.304	0.000	Isotherm & MTWetQtr	252	-0.364	0.000	Lat & Ex_Mg	252	0.232	0.000
HCS & PrecAnnu	252	0.244	0.000	Isotherm & MTWrmQtr	252	-0.759	0.000	Lat & Ex_Na	252	0.175	0.005
HCS & PrecWetQ	252	0.174	0.006	Isotherm & MxT_WP	252	-0.812	0.000	Lat & GrndStuf	252	0.257	0.000
HCS & PrecWrmQ	252	0.182	0.004	Isotherm & OrgC	252	0.214	0.001	Lat & HCS	252	0.165	0.009
HCS & Saltyp	252	-0.303	0.000	Isotherm & PrecAnnu	252	0.565	0.000	Lat & Impedenc	251	0.145	0.021
HCS & ShrubCov	252	0.331	0.000	Isotherm & PrecSeas	252	-0.301	0.000	Lat & Isotherm	252	0.669	0.000
HCS & Temp_AR	252	-0.194	0.002	Isotherm & PrecWetQ	252	0.199	0.001	Lat & Lat			
HCS & Total_N	252	0.263	0.000	Isotherm & PrecWrmQ	252	0.639	0.000	Lat & logEC	252	0.162	0.010
HCS & TreeCanp	252	0.520	0.000	Isotherm & Sand	246	0.181	0.004	Lat & Long	252	0.616	0.000
Impedenc & A_horizo	242	0.264	0.000	Isotherm & Silt	246	-0.235	0.000	Lat & MnT_CP	252	-0.319	0.000
Impedenc & adjSAL	251	0.216	0.001	Isotherm & Temp_AR	252	-0.881	0.000	Lat & MTAnnual	252	-0.945	0.000
Impedenc & Drainage	251	0.269	0.000	Isotherm & Total_P	252	-0.229	0.000	Lat & MTDiuRng	252	-0.769	0.000
Impedenc & Elev	251	-0.126	0.047	K & A_horizo	242	-0.543	0.000	Lat & MTDryQtr	252	-0.839	0.000
Impedenc & Ex_Ca	251	0.128	0.043	K & adjSAL	252	0.458	0.000	Lat & MTWetQtr	252	-0.768	0.000
Impedenc & Ex_Mg	251	0.153	0.015	K & Clay	246	0.331	0.000	Lat & MTWrmQtr	252	-0.974	0.000
Impedenc & Impedenc				K & Dist_cst	252	0.158	0.012	Lat & MxT_WP	252	-0.939	0.000
Impedenc & Lat	251	0.145	0.021	K & Drainage	252	-0.523	0.000	Lat & OrgC	252	0.387	0.000
Impedenc & LF	251	-0.213	0.001	K & EC	252	0.674	0.000	Lat & P	252	0.138	0.029
Impedenc & MTAnnual	251	-0.126	0.046	K & Ex_Ca	252	0.683	0.000	Lat & PrecAnnu	252	0.473	0.000
Impedenc & MTDiuRng	251	-0.134	0.033	K & Ex_K	252	0.952	0.000	Lat & PrecSeas	252	-0.575	0.000
Impedenc & MTWrmQtr	251	-0.137	0.029	K & Ex_Mg	252	0.809	0.000	Lat & PrecWrmQ	252	0.641	0.000
Impedenc & MxT_WP	251	-0.144	0.023	K & Ex_Na	252	0.680	0.000	Lat & Silt	246	-0.134	0.036
Impedenc & P	251	0.178	0.005	K & expSand	246	-0.644	0.000	Lat & Temp_AR	252	-0.799	0.000
Impedenc & ShrubCov	251	-0.135	0.033	K & K				Lat & Total_N	252	0.243	0.000
Impedenc & Silt	245	-0.155	0.015	K & LF	252	-0.602	0.000	Lat & Total_P	252	-0.134	0.034
Impedenc & Temp_AR	251	-0.124	0.049	K & logEC	252	0.674	0.000	Lat & TreeCanp	252	0.294	0.000
Impedenc & TreeCanp	251	0.208	0.001	K & OrgC	252	0.394	0.000	LF & A_horizo	242	0.331	0.000
Isotherm & Dist_cst	252	-0.710	0.000	K & P	252	0.572	0.000	LF & adjSAL	252	-0.599	0.000
Isotherm & EC	252	0.136	0.031	K & pH	252	0.525	0.000	LF & Drainage	252	0.529	0.000
Isotherm & Elev	252	-0.557	0.000	K & PrecAnnu	252	-0.199	0.001	LF & EC	252	-0.510	0.000
Isotherm & Ex_Ca	252	0.151	0.016	K & PrecSeas	252	-0.161	0.011	LF & Elev	252	0.183	0.004
Isotherm & Ex_Mg	252	0.132	0.037	K & PrecWetQ	252	-0.225	0.000	LF & Ex_Ca	252	-0.399	0.000
Isotherm & Ex_Na	252	0.126	0.045	K & Saltyp	252	0.342	0.000	LF & Ex_K	252	-0.588	0.000

Attributes	Valid	Spearman	p-level
LF & Ex_Mg	252	-0.559	0.000
LF & Ex_Na	252	-0.503	0.000
LF & expSand	246	0.323	0.000
LF & GrndHerb	252	-0.160	0.011
LF & Impedenc	251	-0.213	0.001
LF & K	252	-0.602	0.000
LF & LF			
LF & logEC	252	-0.510	0.000
LF & OrgC	252	-0.153	0.015
LF & P	252	-0.490	0.000
LF & pH	252	-0.450	0.000
LF & Saltyp	252	-0.433	0.000
LF & Sand	246	0.322	0.000
LF & ShrubCov	252	0.365	0.000
LF & Silt	246	-0.400	0.000
LF & Slope	252	0.167	0.008
LF & Total_N	252	-0.366	0.000
LF & Total_P	252	-0.459	0.000
LF & TreeCanp	252	-0.134	0.034
logEC & A_horizo	242	-0.393	0.000
logEC & adjSAL	252	0.448	0.000
logEC & Clay	246	0.150	0.019
logEC & Drainage	252	-0.464	0.000
logEC & EC	252	1.000	
logEC & Elev	252	-0.137	0.029
logEC & Ex_Ca	252	0.612	0.000
logEC & Ex_K	252	0.694	0.000
logEC & Ex_Mg	252	0.752	0.000
logEC & Ex_Na	252	0.888	0.000
logEC & expSand	246	-0.357	0.000
logEC & Isotherm	252	0.136	0.031
logEC & K	252	0.674	0.000
logEC & Lat	252	0.162	0.010
logEC & LF	252	-0.510	0.000
logEC & logEC			
logEC & MTAnnual	252	-0.149	0.018
logEC & MTDiuRng	252	-0.139	0.028
logEC & MTDryQtr	252	-0.125	0.048
logEC & MTWrmQtr	252	-0.152	0.016
logEC & MxT_WP	252	-0.169	0.007
logEC & OrgC	252	0.486	0.000
logEC & P	252	0.600	0.000

Attributes	Valid	Spearman	p-level
logEC & pH	252	0.344	0.000
logEC & Saltyp	252	0.442	0.000
logEC & Sand	246	-0.356	0.000
logEC & ShrubCov	252	-0.268	0.000
logEC & Silt	246	0.383	0.000
logEC & Temp_AR	252	-0.165	0.009
logEC & Total_N	252	0.596	0.000
logEC & Total_P	252	0.555	0.000
Long & A_horizo	242	-0.175	0.006
Long & adjSAL	252	0.144	0.023
Long & Dist_cst	252	0.233	0.000
Long & Elev	252	0.217	0.001
Long & GrndHerb	252	-0.233	0.000
Long & Isotherm	252	0.293	0.000
Long & Lat	252	0.616	0.000
Long & Long			
Long & MnT_CP	252	-0.428	0.000
Long & MTAnnual	252	-0.484	0.000
Long & MTDiuRng	252	-0.413	0.000
Long & MTDryQtr	252	-0.522	0.000
Long & MTWetQtr	252	-0.410	0.000
Long & MTWrmQtr	252	-0.553	0.000
Long & MxT_WP	252	-0.557	0.000
Long & pH	252	0.134	0.033
Long & PrecAnnu	252	-0.226	0.000
Long & PrecSeas	252	-0.924	0.000
Long & PrecWetQ	252	-0.627	0.000
Long & PrecWrmQ	252	0.512	0.000
Long & Slope	252	-0.174	0.006
Long & Temp_AR	252	-0.364	0.000
Long & Total_P	252	-0.244	0.000
MnT_CP & Dist_cst	252	-0.653	0.000
MnT_CP & Elev	252	-0.658	0.000
MnT_CP & GrndHerb	252	0.190	0.003
MnT_CP & HCS	252	0.186	0.003
MnT_CP & Isotherm	252	0.191	0.002
MnT_CP & Lat	252	-0.319	0.000
MnT_CP & Long	252	-0.428	0.000
MnT_CP & MnT_CP			
MnT_CP & MTAnnual	252	0.464	0.000
MnT_CP & MTDryQtr	252	0.219	0.000
MnT_CP & MTWetQtr	252	0.657	0.000

Attributes	Valid	Spearman	p-level
MnT_CP & MTWrmQtr	252	0.248	0.000
MnT_CP & MxT_WP	252	0.168	0.007
MnT_CP & OrgC	252	-0.174	0.006
MnT_CP & PrecSeas	252	0.269	0.000
MnT_CP & PrecWetQ	252	0.235	0.000
MnT_CP & ShrubCov	252	0.285	0.000
MnT_CP & Slope	252	-0.192	0.002
MTAnnual & EC	252	-0.149	0.018
MTAnnual & Ex_Ca	252	-0.283	0.000
MTAnnual & Ex_Mg	252	-0.217	0.001
MTAnnual & Ex_Na	252	-0.180	0.004
MTAnnual & GrndStuf	252	-0.270	0.000
MTAnnual & HCS	252	-0.144	0.023
MTAnnual & Impedenc	251	-0.126	0.046
MTAnnual & Isotherm	252	-0.591	0.000
MTAnnual & Lat	252	-0.945	0.000
MTAnnual & logEC	252	-0.149	0.018
MTAnnual & Long	252	-0.484	0.000
MTAnnual & MnT_CP	252	0.464	0.000
MTAnnual & MTAnnual			
MTAnnual & MTDiuRng	252	0.709	0.000
MTAnnual & MTDryQtr	252	0.800	0.000
MTAnnual & MTWetQtr	252	0.883	0.000
MTAnnual & MTWrmQtr	252	0.945	0.000
MTAnnual & MxT_WP	252	0.897	0.000
MTAnnual & OrgC	252	-0.473	0.000
MTAnnual & PrecAnnu	252	-0.541	0.000
MTAnnual & PrecSeas	252	0.422	0.000
MTAnnual & PrecWetQ	252	-0.169	0.007
MTAnnual & PrecWrmQ	252	-0.525	0.000
MTAnnual & Silt	246	0.134	0.035
MTAnnual & Temp_AR	252	0.746	0.000
MTAnnual & Total_N	252	-0.296	0.000
MTAnnual & TreeCanp	252	-0.310	0.000
MTDiuRng & Dist_cst	252	0.521	0.000
MTDiuRng & EC	252	-0.139	0.028
MTDiuRng & Elev	252	0.295	0.000
MTDiuRng & Ex_Ca	252	-0.232	0.000
MTDiuRng & Ex_Mg	252	-0.202	0.001
MTDiuRng & Ex_Na	252	-0.166	0.008
MTDiuRng & GrndStuf	252	-0.203	0.001
MTDiuRng & HCS	252	-0.253	0.000

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
MTDiuRng & Impedenc	251	-0.134	0.033	MTDryQtr & Temp_AR	252	0.712	0.000	MTWrmQtr & Long	252	-0.553	0.000
MTDiuRng & Isotherm	252	-0.707	0.000	MTDryQtr & Total_N	252	-0.164	0.009	MTWrmQtr & MnT_CP	252	0.248	0.000
MTDiuRng & Lat	252	-0.769	0.000	MTDryQtr & Total_P	252	0.128	0.043	MTWrmQtr & MTAnnual	252	0.945	0.000
MTDiuRng & logEC	252	-0.139	0.028	MTDryQtr & TreeCanp	252	-0.191	0.002	MTWrmQtr & MTDiuRng	252	0.836	0.000
MTDiuRng & Long	252	-0.413	0.000	MTWetQtr & Elev	252	-0.245	0.000	MTWrmQtr & MTDryQtr	252	0.844	0.000
MTDiuRng & MTAnnual	252	0.709	0.000	MTWetQtr & Ex_Ca	252	-0.270	0.000	MTWrmQtr & MTWetQtr	252	0.766	0.000
MTDiuRng & MTDiuRng				MTWetQtr & Ex_Mg	252	-0.181	0.004	MTWrmQtr & MTWrmQtr			
MTDiuRng & MTDryQtr	252	0.657	0.000	MTWetQtr & Ex_Na	252	-0.158	0.012	MTWrmQtr & MxT_WP	252	0.983	0.000
MTDiuRng & MTWetQtr	252	0.457	0.000	MTWetQtr & GrndStuf	252	-0.254	0.000	MTWrmQtr & OrgC	252	-0.413	0.000
MTDiuRng & MTWrmQtr	252	0.836	0.000	MTWetQtr & Isotherm	252	-0.364	0.000	MTWrmQtr & PrecAnnu	252	-0.586	0.000
MTDiuRng & MxT_WP	252	0.892	0.000	MTWetQtr & Lat	252	-0.768	0.000	MTWrmQtr & PrecSeas	252	0.496	0.000
MTDiuRng & OrgC	252	-0.357	0.000	MTWetQtr & Long	252	-0.410	0.000	MTWrmQtr & PrecWetQ	252	-0.155	0.013
MTDiuRng & PrecAnnu	252	-0.557	0.000	MTWetQtr & MnT_CP	252	0.657	0.000	MTWrmQtr & PrecWrmQ	252	-0.650	0.000
MTDiuRng & PrecSeas	252	0.395	0.000	MTWetQtr & MTAnnual	252	0.883	0.000	MTWrmQtr & Silt	246	0.168	0.008
MTDiuRng & PrecWetQ	252	-0.184	0.003	MTWetQtr & MTDiuRng	252	0.457	0.000	MTWrmQtr & Temp_AR	252	0.887	0.000
MTDiuRng & PrecWrmQ	252	-0.544	0.000	MTWetQtr & MTDryQtr	252	0.638	0.000	MTWrmQtr & Total_N	252	-0.244	0.000
MTDiuRng & Silt	246	0.129	0.043	MTWetQtr & MTWetQtr				MTWrmQtr & Total_P	252	0.178	0.005
MTDiuRng & Temp_AR	252	0.941	0.000	MTWetQtr & MTWrmQtr	252	0.766	0.000	MTWrmQtr & TreeCanp	252	-0.294	0.000
MTDiuRng & Total_N	252	-0.246	0.000	MTWetQtr & MxT_WP	252	0.702	0.000	MxT_WP & Dist_cst	252	0.422	0.000
MTDiuRng & Total_P	252	0.138	0.029	MTWetQtr & OrgC	252	-0.459	0.000	MxT_WP & EC	252	-0.169	0.007
MTDiuRng & TreeCanp	252	-0.258	0.000	MTWetQtr & PrecAnnu	252	-0.486	0.000	MxT_WP & Elev	252	0.235	0.000
MTDryQtr & Dist_cst	252	0.266	0.000	MTWetQtr & PrecSeas	252	0.287	0.000	MxT_WP & Ex_Ca	252	-0.256	0.000
MTDryQtr & EC	252	-0.125	0.048	MTWetQtr & PrecWetQ	252	-0.185	0.003	MxT_WP & Ex_Mg	252	-0.217	0.001
MTDryQtr & Ex_Ca	252	-0.208	0.001	MTWetQtr & PrecWrmQ	252	-0.366	0.000	MxT_WP & Ex_Na	252	-0.191	0.002
MTDryQtr & Ex_Mg	252	-0.184	0.003	MTWetQtr & Saltyp	252	0.146	0.021	MxT_WP & GrndStuf	252	-0.217	0.001
MTDryQtr & GrndStuf	252	-0.180	0.004	MTWetQtr & ShrubCov	252	0.176	0.005	MxT_WP & HCS	252	-0.164	0.009
MTDryQtr & Isotherm	252	-0.684	0.000	MTWetQtr & Slope	252	-0.158	0.012	MxT_WP & Impedenc	251	-0.144	0.023
MTDryQtr & Lat	252	-0.839	0.000	MTWetQtr & Temp_AR	252	0.497	0.000	MxT_WP & Isotherm	252	-0.812	0.000
MTDryQtr & logEC	252	-0.125	0.048	MTWetQtr & Total_N	252	-0.275	0.000	MxT_WP & Lat	252	-0.939	0.000
MTDryQtr & Long	252	-0.522	0.000	MTWetQtr & TreeCanp	252	-0.294	0.000	MxT_WP & logEC	252	-0.169	0.007
MTDryQtr & MnT_CP	252	0.219	0.000	MTWrmQtr & Dist_cst	252	0.340	0.000	MxT_WP & Long	252	-0.557	0.000
MTDryQtr & MTAnnual	252	0.800	0.000	MTWrmQtr & EC	252	-0.152	0.016	MxT_WP & MnT_CP	252	0.168	0.007
MTDryQtr & MTDiuRng	252	0.657	0.000	MTWrmQtr & Elev	252	0.169	0.007	MxT_WP & MTAnnual	252	0.897	0.000
MTDryQtr & MTDryQtr				MTWrmQtr & Ex_Ca	252	-0.266	0.000	MxT_WP & MTDiuRng	252	0.892	0.000
MTDryQtr & MTWetQtr	252	0.638	0.000	MTWrmQtr & Ex_Mg	252	-0.215	0.001	MxT_WP & MTDryQtr	252	0.829	0.000
MTDryQtr & MTWrmQtr	252	0.844	0.000	MTWrmQtr & Ex_Na	252	-0.175	0.005	MxT_WP & MTWetQtr	252	0.702	0.000
MTDryQtr & MxT_WP	252	0.829	0.000	MTWrmQtr & GrndStuf	252	-0.248	0.000	MxT_WP & MTWrmQtr	252	0.983	0.000
MTDryQtr & OrgC	252	-0.271	0.000	MTWrmQtr & HCS	252	-0.165	0.009	MxT_WP & MxT_WP			
MTDryQtr & P	252	-0.132	0.036	MTWrmQtr & Impedenc	251	-0.137	0.029	MxT_WP & OrgC	252	-0.392	0.000
MTDryQtr & PrecAnnu	252	-0.374	0.000	MTWrmQtr & Isotherm	252	-0.759	0.000	MxT_WP & PrecAnnu	252	-0.586	0.000
MTDryQtr & PrecSeas	252	0.538	0.000	MTWrmQtr & Lat	252	-0.974	0.000	MxT_WP & PrecSeas	252	0.494	0.000
MTDryQtr & PrecWrmQ	252	-0.643	0.000	MTWrmQtr & logEC	252	-0.152	0.016	MxT_WP & PrecWetQ	252	-0.149	0.018

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
MxT_WP & PrecWrmQ	252	-0.642	0.000	P & A_horizo	242	-0.229	0.000	pH & logEC	252	0.344	0.000
MxT_WP & Silt	246	0.171	0.007	P & adjSAL	252	0.380	0.000	pH & Long	252	0.134	0.033
MxT_WP & Temp_AR	252	0.939	0.000	P & Clay	246	0.164	0.010	pH & P	252	0.311	0.000
MxT_WP & Total_N	252	-0.238	0.000	P & Drainage	252	-0.291	0.000	pH & pH			
MxT_WP & Total_P	252	0.182	0.004	P & EC	252	0.600	0.000	pH & PrecAnnu	252	-0.215	0.001
MxT_WP & TreeCanp	252	-0.273	0.000	P & Elev	252	-0.274	0.000	pH & PrecSeas	252	-0.188	0.003
OrgC & A_horizo	242	-0.222	0.000	P & Ex_Ca	252	0.563	0.000	pH & PrecWetQ	252	-0.271	0.000
OrgC & Dist_cst	252	-0.151	0.016	P & Ex_K	252	0.596	0.000	pH & Saltyp	252	0.286	0.000
OrgC & Drainage	252	-0.167	0.008	P & Ex_Mg	252	0.630	0.000	pH & Sand	246	-0.200	0.002
OrgC & EC	252	0.486	0.000	P & Ex_Na	252	0.583	0.000	pH & Silt	246	0.300	0.000
OrgC & Ex_Ca	252	0.727	0.000	P & expSand	246	-0.343	0.000	pH & Slope	252	-0.241	0.000
OrgC & Ex_K	252	0.452	0.000	P & Impedenc	251	0.178	0.005	pH & Total_N	252	0.142	0.025
OrgC & Ex_Mg	252	0.622	0.000	P & K	252	0.572	0.000	pH & Total_P	252	0.311	0.000
OrgC & Ex_Na	252	0.517	0.000	P & Lat	252	0.138	0.029	PrecAnnu & A_horizo	242	0.168	0.009
OrgC & expSand	246	-0.284	0.000	P & LF	252	-0.490	0.000	PrecAnnu & adjSAL	252	-0.147	0.020
OrgC & GrndStuf	252	0.452	0.000	P & logEC	252	0.600	0.000	PrecAnnu & Clay	246	-0.213	0.001
OrgC & HCS	252	0.304	0.000	P & MTDryQtr	252	-0.132	0.036	PrecAnnu & Dist_cst	252	-0.668	0.000
OrgC & Isotherm	252	0.214	0.001	P & OrgC	252	0.394	0.000	PrecAnnu & Elev	252	-0.411	0.000
OrgC & K	252	0.394	0.000	P & P				PrecAnnu & Ex_Ca	252	0.185	0.003
OrgC & Lat	252	0.387	0.000	P & pH	252	0.311	0.000	PrecAnnu & Ex_K	252	-0.152	0.016
OrgC & LF	252	-0.153	0.015	P & PrecAnnu	252	0.152	0.016	PrecAnnu & expSand	246	0.214	0.001
OrgC & logEC	252	0.486	0.000	P & PrecWetQ	252	0.143	0.024	PrecAnnu & GrndStuf	252	0.253	0.000
OrgC & MnT_CP	252	-0.174	0.006	P & Saltyp	252	0.321	0.000	PrecAnnu & HCS	252	0.244	0.000
OrgC & MTAnnual	252	-0.473	0.000	P & Sand	246	-0.343	0.000	PrecAnnu & Isotherm	252	0.565	0.000
OrgC & MTDiuRng	252	-0.357	0.000	P & ShrubCov	252	-0.169	0.007	PrecAnnu & K	252	-0.199	0.001
OrgC & MTDryQtr	252	-0.271	0.000	P & Silt	246	0.363	0.000	PrecAnnu & Lat	252	0.473	0.000
OrgC & MTWetQtr	252	-0.459	0.000	P & Slope	252	-0.137	0.030	PrecAnnu & Long	252	-0.226	0.000
OrgC & MTWrmQtr	252	-0.413	0.000	P & Total_N	252	0.528	0.000	PrecAnnu & MTAnnual	252	-0.541	0.000
OrgC & MxT_WP	252	-0.392	0.000	P & Total_P	252	0.583	0.000	PrecAnnu & MTDiuRng	252	-0.557	0.000
OrgC & OrgC				P & TreeCanp	252	0.207	0.001	PrecAnnu & MTDryQtr	252	-0.374	0.000
OrgC & P	252	0.394	0.000	pH & A_horizo	242	-0.304	0.000	PrecAnnu & MTWetQtr	252	-0.486	0.000
OrgC & PrecAnnu	252	0.480	0.000	pH & adjSAL	252	0.366	0.000	PrecAnnu & MTWrmQtr	252	-0.586	0.000
OrgC & PrecWetQ	252	0.387	0.000	pH & Drainage	252	-0.299	0.000	PrecAnnu & MxT_WP	252	-0.586	0.000
OrgC & Saltyp	252	-0.173	0.006	pH & EC	252	0.344	0.000	PrecAnnu & OrgC	252	0.480	0.000
OrgC & Sand	246	-0.284	0.000	pH & Ex_Ca	252	0.473	0.000	PrecAnnu & P	252	0.152	0.016
OrgC & ShrubCov	252	-0.162	0.010	pH & Ex_K	252	0.532	0.000	PrecAnnu & pH	252	-0.215	0.001
OrgC & Silt	246	0.310	0.000	pH & Ex_Mg	252	0.530	0.000	PrecAnnu & PrecAnnu			
OrgC & Slope	252	0.155	0.014	pH & Ex_Na	252	0.299	0.000	PrecAnnu & PrecSeas	252	0.354	0.000
OrgC & Temp_AR	252	-0.363	0.000	pH & expSand	246	-0.200	0.002	PrecAnnu & PrecWetQ	252	0.855	0.000
OrgC & Total_N	252	0.903	0.000	pH & GrndHerb	252	-0.143	0.023	PrecAnnu & PrecWrmQ	252	0.232	0.000
OrgC & Total_P	252	0.520	0.000	pH & K	252	0.525	0.000	PrecAnnu & Saltyp	252	-0.140	0.027
OrgC & TreeCanp	252	0.480	0.000	pH & LF	252	-0.450	0.000	PrecAnnu & Sand	246	0.213	0.001

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
PrecAnnu & Silt	246	-0.150	0.019	PrecWetQ & K	252	-0.225	0.000	Saltyp & A_horizo	242	-0.134	0.037
PrecAnnu & Slope	252	0.207	0.001	PrecWetQ & Long	252	-0.627	0.000	Saltyp & adjSAL	252	0.563	0.000
PrecAnnu & Temp_AR	252	-0.655	0.000	PrecWetQ & MnT_CP	252	0.235	0.000	Saltyp & Drainage	252	-0.378	0.000
PrecAnnu & Total_N	252	0.309	0.000	PrecWetQ & MTAnnual	252	-0.169	0.007	Saltyp & EC	252	0.442	0.000
PrecAnnu & TreeCanp	252	0.240	0.000	PrecWetQ & MTDiuRng	252	-0.184	0.003	Saltyp & Elev	252	-0.158	0.012
PrecSeas & A_horizo	242	0.169	0.008	PrecWetQ & MTWetQtr	252	-0.185	0.003	Saltyp & Ex_K	252	0.312	0.000
PrecSeas & adjSAL	252	-0.132	0.037	PrecWetQ & MTWrmQtr	252	-0.155	0.013	Saltyp & Ex_Mg	252	0.291	0.000
PrecSeas & Clay	246	-0.143	0.025	PrecWetQ & MxT_WP	252	-0.149	0.018	Saltyp & Ex_Na	252	0.366	0.000
PrecSeas & Dist_cst	252	-0.221	0.000	PrecWetQ & OrgC	252	0.387	0.000	Saltyp & GrmdStuf	252	-0.324	0.000
PrecSeas & Elev	252	-0.190	0.002	PrecWetQ & P	252	0.143	0.024	Saltyp & HCS	252	-0.303	0.000
PrecSeas & Ex_K	252	-0.138	0.029	PrecWetQ & pH	252	-0.271	0.000	Saltyp & K	252	0.342	0.000
PrecSeas & GrmdHerb	252	0.170	0.007	PrecWetQ & PrecAnnu	252	0.855	0.000	Saltyp & LF	252	-0.433	0.000
PrecSeas & Isotherm	252	-0.301	0.000	PrecWetQ & PrecSeas	252	0.744	0.000	Saltyp & logEC	252	0.442	0.000
PrecSeas & K	252	-0.161	0.011	PrecWetQ & PrecWetQ				Saltyp & MTWetQtr	252	0.146	0.021
PrecSeas & Lat	252	-0.575	0.000	PrecWetQ & PrecWrmQ	252	-0.148	0.019	Saltyp & OrgC	252	-0.173	0.006
PrecSeas & Long	252	-0.924	0.000	PrecWetQ & Sand	246	0.145	0.023	Saltyp & P	252	0.321	0.000
PrecSeas & MnT_CP	252	0.269	0.000	PrecWetQ & Slope	252	0.291	0.000	Saltyp & pH	252	0.286	0.000
PrecSeas & MTAnnual	252	0.422	0.000	PrecWetQ & Temp_AR	252	-0.268	0.000	Saltyp & PrecAnnu	252	-0.140	0.027
PrecSeas & MTDiuRng	252	0.395	0.000	PrecWetQ & Total_N	252	0.289	0.000	Saltyp & Saltyp			
PrecSeas & MTDryQtr	252	0.538	0.000	PrecWrmQ & Dist_cst	252	-0.339	0.000	Saltyp & ShrubCov	252	-0.125	0.047
PrecSeas & MTWetQtr	252	0.287	0.000	PrecWrmQ & Elev	252	-0.154	0.015	Saltyp & Silt	246	0.145	0.023
PrecSeas & MTWrmQtr	252	0.496	0.000	PrecWrmQ & GrmdStuf	252	0.203	0.001	Saltyp & Slope	252	-0.167	0.008
PrecSeas & MxT_WP	252	0.494	0.000	PrecWrmQ & HCS	252	0.182	0.004	Saltyp & Total_P	252	0.280	0.000
PrecSeas & pH	252	-0.188	0.003	PrecWrmQ & Isotherm	252	0.639	0.000	Saltyp & TreeCanp	252	-0.260	0.000
PrecSeas & PrecAnnu	252	0.354	0.000	PrecWrmQ & Lat	252	0.641	0.000	Sand & A_horizo	237	0.461	0.000
PrecSeas & PrecSeas				PrecWrmQ & Long	252	0.512	0.000	Sand & adjSAL	246	-0.292	0.000
PrecSeas & PrecWetQ	252	0.744	0.000	PrecWrmQ & MTAnnual	252	-0.525	0.000	Sand & Clay	246	-0.778	0.000
PrecSeas & PrecWrmQ	252	-0.624	0.000	PrecWrmQ & MTDiuRng	252	-0.544	0.000	Sand & Dist_cst	246	-0.206	0.001
PrecSeas & Slope	252	0.304	0.000	PrecWrmQ & MTDryQtr	252	-0.643	0.000	Sand & Drainage	246	0.292	0.000
PrecSeas & Temp_AR	252	0.332	0.000	PrecWrmQ & MTWetQtr	252	-0.366	0.000	Sand & EC	246	-0.356	0.000
PrecSeas & Total_P	252	0.196	0.002	PrecWrmQ & MTWrmQtr	252	-0.650	0.000	Sand & Ex_Ca	246	-0.384	0.000
PrecWetQ & A_horizo	242	0.207	0.001	PrecWrmQ & MxT_WP	252	-0.642	0.000	Sand & Ex_K	246	-0.644	0.000
PrecWetQ & adjSAL	252	-0.154	0.014	PrecWrmQ & PrecAnnu	252	0.232	0.000	Sand & Ex_Mg	246	-0.513	0.000
PrecWetQ & Clay	246	-0.196	0.002	PrecWrmQ & PrecSeas	252	-0.624	0.000	Sand & Ex_Na	246	-0.386	0.000
PrecWetQ & Dist_cst	252	-0.526	0.000	PrecWrmQ & PrecWetQ	252	-0.148	0.019	Sand & expSand	246	1.000	0.000
PrecWetQ & Elev	252	-0.388	0.000	PrecWrmQ & PrecWrmQ				Sand & Isotherm	246	0.181	0.004
PrecWetQ & Ex_K	252	-0.176	0.005	PrecWrmQ & ShrubCov	252	0.130	0.039	Sand & K	246	-0.644	0.000
PrecWetQ & expSand	246	0.145	0.023	PrecWrmQ & Silt	246	-0.200	0.002	Sand & LF	246	0.322	0.000
PrecWetQ & GrmdHerb	252	0.166	0.008	PrecWrmQ & Slope	252	-0.244	0.000	Sand & logEC	246	-0.356	0.000
PrecWetQ & GrmdStuf	252	0.138	0.029	PrecWrmQ & Temp_AR	252	-0.588	0.000	Sand & OrgC	246	-0.284	0.000
PrecWetQ & HCS	252	0.174	0.006	PrecWrmQ & Total_P	252	-0.220	0.000	Sand & P	246	-0.343	0.000
PrecWetQ & Isotherm	252	0.199	0.001	PrecWrmQ & TreeCanp	252	0.127	0.044	Sand & pH	246	-0.200	0.002

Attributes	Valid	Spearman	p-level
Sand & PrecAnnu	246	0.213	0.001
Sand & PrecWetQ	246	0.145	0.023
Sand & Sand			
Sand & Silt	246	-0.773	0.000
Sand & Temp_AR	246	-0.159	0.012
Sand & Total_N	246	-0.443	0.000
Sand & Total_P	246	-0.557	0.000
ShrubCov & adjSAL	252	-0.231	0.000
ShrubCov & Dist_cst	252	-0.166	0.008
ShrubCov & Drainage	252	0.156	0.013
ShrubCov & EC	252	-0.268	0.000
ShrubCov & Ex_Ca	252	-0.223	0.000
ShrubCov & Ex_K	252	-0.227	0.000
ShrubCov & Ex_Mg	252	-0.229	0.000
ShrubCov & Ex_Na	252	-0.273	0.000
ShrubCov & HCS	252	0.331	0.000
ShrubCov & Impedenc	251	-0.135	0.033
ShrubCov & K	252	-0.267	0.000
ShrubCov & LF	252	0.365	0.000
ShrubCov & logEC	252	-0.268	0.000
ShrubCov & MnT_CP	252	0.285	0.000
ShrubCov & MTWetQtr	252	0.176	0.005
ShrubCov & OrgC	252	-0.162	0.010
ShrubCov & P	252	-0.169	0.007
ShrubCov & PrecWrmQ	252	0.130	0.039
ShrubCov & Saltyp	252	-0.125	0.047
ShrubCov & ShrubCov			
ShrubCov & Silt	246	-0.135	0.034
ShrubCov & Total_N	252	-0.240	0.000
ShrubCov & Total_P	252	-0.241	0.000
ShrubCov & TreeCanp	252	-0.261	0.000
Silt & A_horizo	237	-0.502	0.000
Silt & adjSAL	246	0.289	0.000
Silt & Clay	246	0.255	0.000
Silt & Dist_cst	246	0.143	0.025
Silt & Drainage	246	-0.408	0.000
Silt & EC	246	0.383	0.000
Silt & Ex_Ca	246	0.411	0.000
Silt & Ex_K	246	0.682	0.000
Silt & Ex_Mg	246	0.539	0.000
Silt & Ex_Na	246	0.431	0.000
Silt & expSand	246	-0.772	0.000

Attributes	Valid	Spearman	p-level
Silt & GrndHerb	246	0.166	0.009
Silt & Impedenc	245	-0.155	0.015
Silt & Isotherm	246	-0.235	0.000
Silt & K	246	0.680	0.000
Silt & Lat	246	-0.134	0.036
Silt & LF	246	-0.400	0.000
Silt & logEC	246	0.383	0.000
Silt & MTAnnual	246	0.134	0.035
Silt & MTDiuRng	246	0.129	0.043
Silt & MTWrmQtr	246	0.168	0.008
Silt & MxT_WP	246	0.171	0.007
Silt & OrgC	246	0.310	0.000
Silt & P	246	0.363	0.000
Silt & pH	246	0.300	0.000
Silt & PrecAnnu	246	-0.150	0.019
Silt & PrecWrmQ	246	-0.200	0.002
Silt & Saltyp	246	0.145	0.023
Silt & Sand	246	-0.773	0.000
Silt & ShrubCov	246	-0.135	0.034
Silt & Silt			
Silt & Temp_AR	246	0.187	0.003
Silt & Total_N	246	0.483	0.000
Silt & Total_P	246	0.623	0.000
Silt & TreeCanp	246	0.130	0.042
Slope & adjSAL	252	-0.184	0.003
Slope & LF	252	0.167	0.008
Slope & Long	252	-0.174	0.006
Slope & MnT_CP	252	-0.192	0.002
Slope & MTWetQtr	252	-0.158	0.012
Slope & OrgC	252	0.155	0.014
Slope & P	252	-0.137	0.030
Slope & pH	252	-0.241	0.000
Slope & PrecAnnu	252	0.207	0.001
Slope & PrecSeas	252	0.304	0.000
Slope & PrecWetQ	252	0.291	0.000
Slope & PrecWrmQ	252	-0.244	0.000
Slope & Saltyp	252	-0.167	0.008
Slope & Slope			
Slope & Total_N	252	0.150	0.017
Temp_AR & Dist_cst	252	0.641	0.000
Temp_AR & EC	252	-0.165	0.009
Temp_AR & Elev	252	0.425	0.000

Attributes	Valid	Spearman	p-level
Temp_AR & Ex_Ca	252	-0.234	0.000
Temp_AR & Ex_Mg	252	-0.198	0.002
Temp_AR & Ex_Na	252	-0.186	0.003
Temp_AR & expSand	246	-0.159	0.013
Temp_AR & GrndStuf	252	-0.189	0.003
Temp_AR & HCS	252	-0.194	0.002
Temp_AR & Impedenc	251	-0.124	0.049
Temp_AR & Isotherm	252	-0.881	0.000
Temp_AR & Lat	252	-0.799	0.000
Temp_AR & logEC	252	-0.165	0.009
Temp_AR & Long	252	-0.364	0.000
Temp_AR & MTAnnual	252	0.746	0.000
Temp_AR & MTDiuRng	252	0.941	0.000
Temp_AR & MTDryQtr	252	0.712	0.000
Temp_AR & MTWetQtr	252	0.497	0.000
Temp_AR & MTWrmQtr	252	0.887	0.000
Temp_AR & MxT_WP	252	0.939	0.000
Temp_AR & OrgC	252	-0.363	0.000
Temp_AR & PrecAnnu	252	-0.655	0.000
Temp_AR & PrecSeas	252	0.332	0.000
Temp_AR & PrecWetQ	252	-0.268	0.000
Temp_AR & PrecWrmQ	252	-0.588	0.000
Temp_AR & Sand	246	-0.159	0.012
Temp_AR & Silt	246	0.187	0.003
Temp_AR & Temp_AR			
Temp_AR & Total_N	252	-0.227	0.000
Temp_AR & Total_P	252	0.177	0.005
Temp_AR & TreeCanp	252	-0.222	0.000
Total_N & A_horizo	242	-0.307	0.000
Total_N & adjSAL	252	0.174	0.005
Total_N & Clay	246	0.193	0.002
Total_N & Drainage	252	-0.319	0.000
Total_N & EC	252	0.596	0.000
Total_N & Ex_Ca	252	0.781	0.000
Total_N & Ex_K	252	0.659	0.000
Total_N & Ex_Mg	252	0.725	0.000
Total_N & Ex_Na	252	0.617	0.000
Total_N & expSand	246	-0.443	0.000
Total_N & GrndStuf	252	0.378	0.000
Total_N & HCS	252	0.263	0.000
Total_N & K	252	0.612	0.000
Total_N & Lat	252	0.243	0.000

Attributes	Valid	Spearman	p-level	Attributes	Valid	Spearman	p-level
Total_N & LF	252	-0.366	0.000	Total_P & MxT_WP	252	0.182	0.004
Total_N & logEC	252	0.596	0.000	Total_P & OrgC	252	0.520	0.000
Total_N & MTAnnual	252	-0.296	0.000	Total_P & P	252	0.583	0.000
Total_N & MTDiuRng	252	-0.246	0.000	Total_P & pH	252	0.311	0.000
Total_N & MTDryQtr	252	-0.164	0.009	Total_P & PrecSeas	252	0.196	0.002
Total_N & MTWetQtr	252	-0.275	0.000	Total_P & PrecWrmQ	252	-0.220	0.000
Total_N & MTWrmQtr	252	-0.244	0.000	Total_P & Saltyp	252	0.280	0.000
Total_N & MxT_WP	252	-0.238	0.000	Total_P & Sand	246	-0.557	0.000
Total_N & OrgC	252	0.903	0.000	Total_P & ShrubCov	252	-0.241	0.000
Total_N & P	252	0.528	0.000	Total_P & Silt	246	0.623	0.000
Total_N & pH	252	0.142	0.025	Total_P & Temp_AR	252	0.177	0.005
Total_N & PrecAnnu	252	0.309	0.000	Total_P & Total_N	252	0.760	0.000
Total_N & PrecWetQ	252	0.289	0.000	Total_P & Total_P			
Total_N & Sand	246	-0.443	0.000	Total_P & TreeCanp	252	0.153	0.015
Total_N & ShrubCov	252	-0.240	0.000	TreeCanp & Drainage	252	0.148	0.019
Total_N & Silt	246	0.483	0.000	TreeCanp & Ex_Ca	252	0.403	0.000
Total_N & Slope	252	0.150	0.017	TreeCanp & Ex_K	252	0.174	0.006
Total_N & Temp_AR	252	-0.227	0.000	TreeCanp & Ex_Mg	252	0.278	0.000
Total_N & Total_N				TreeCanp & GrndStuf	252	0.452	0.000
Total_N & Total_P	252	0.760	0.000	TreeCanp & HCS	252	0.520	0.000
Total_N & TreeCanp	252	0.410	0.000	TreeCanp & Impedenc	251	0.208	0.001
Total_P & A_horizo	242	-0.289	0.000	TreeCanp & K	252	0.163	0.010
Total_P & adjSAL	252	0.354	0.000	TreeCanp & Lat	252	0.294	0.000
Total_P & Clay	246	0.238	0.000	TreeCanp & LF	252	-0.134	0.034
Total_P & Dist_cst	252	0.132	0.037	TreeCanp & MTAnnual	252	-0.310	0.000
Total_P & Drainage	252	-0.405	0.000	TreeCanp & MTDiuRng	252	-0.258	0.000
Total_P & EC	252	0.555	0.000	TreeCanp & MTDryQtr	252	-0.191	0.002
Total_P & Ex_Ca	252	0.653	0.000	TreeCanp & MTWetQtr	252	-0.294	0.000
Total_P & Ex_K	252	0.766	0.000	TreeCanp & MTWrmQtr	252	-0.294	0.000
Total_P & Ex_Mg	252	0.679	0.000	TreeCanp & MxT_WP	252	-0.273	0.000
Total_P & Ex_Na	252	0.564	0.000	TreeCanp & OrgC	252	0.480	0.000
Total_P & expSand	246	-0.557	0.000	TreeCanp & P	252	0.207	0.001
Total_P & GrndStuf	252	0.134	0.033	TreeCanp & PrecAnnu	252	0.240	0.000
Total_P & Isotherm	252	-0.229	0.000	TreeCanp & PrecWrmQ	252	0.127	0.044
Total_P & K	252	0.749	0.000	TreeCanp & Saltyp	252	-0.260	0.000
Total_P & Lat	252	-0.134	0.034	TreeCanp & ShrubCov	252	-0.261	0.000
Total_P & LF	252	-0.459	0.000	TreeCanp & Silt	246	0.130	0.042
Total_P & logEC	252	0.555	0.000	TreeCanp & Temp_AR	252	-0.222	0.000
Total_P & Long	252	-0.244	0.000	TreeCanp & Total_N	252	0.410	0.000
Total_P & MTDiuRng	252	0.138	0.029	TreeCanp & Total_P	252	0.153	0.015
Total_P & MTDryQtr	252	0.128	0.043	TreeCanp & TreeCanp			
Total_P & MTWrmQtr	252	0.178	0.005				