Supplemental Information

Biogeochemical factors promoting nutrient mobilisation in riparian vegetated buffer strips

Marc I. Stutter and Samia Richards

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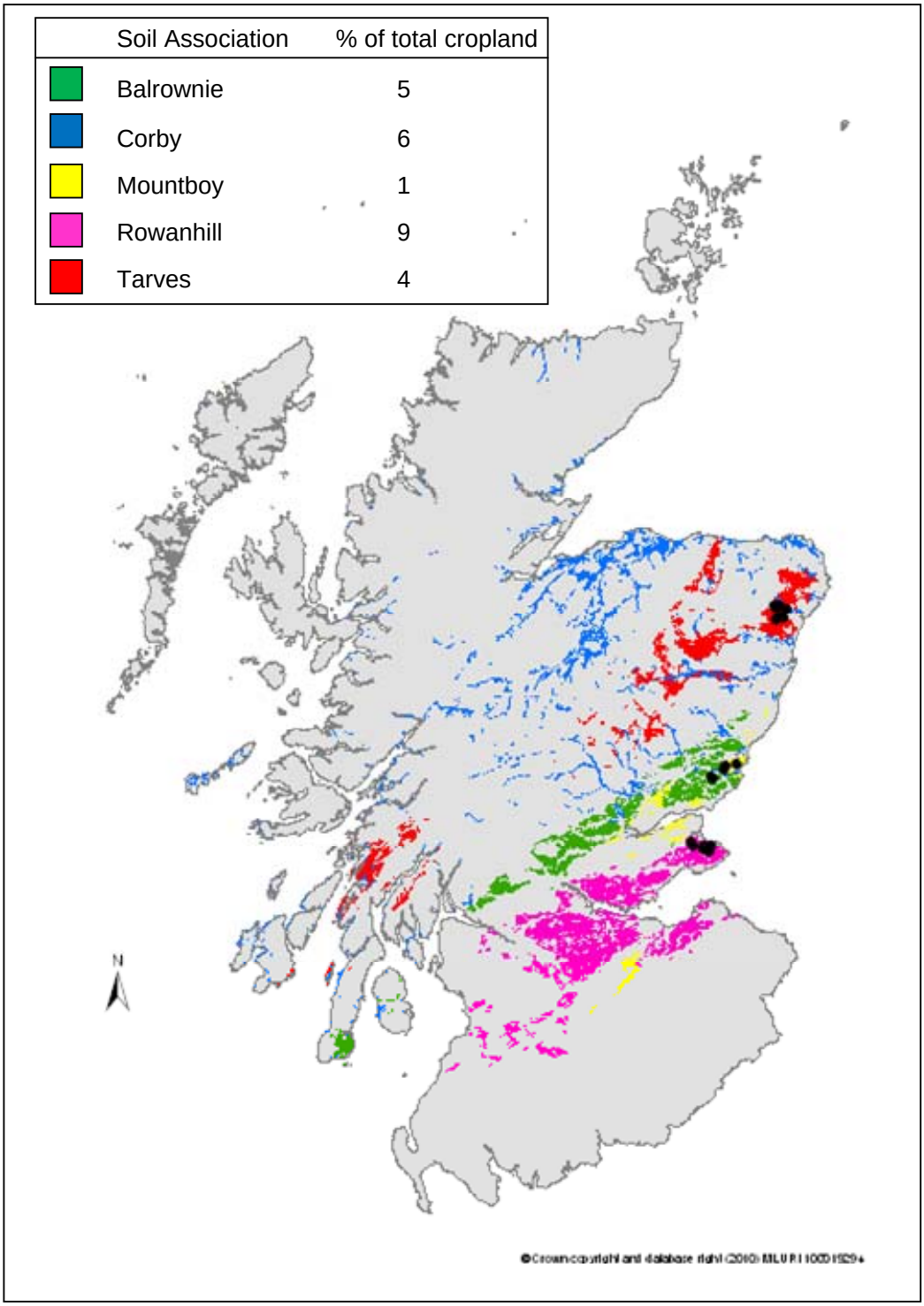
Supplemental Table S1. Soil sampling site properties.

Site name	NGR[†]	Slope angle (form[‡])	Slope length	Soil Association	Land Use[§]	Crop[¶]	Buffer width (m)	Fenced: no or yes	Buffer vegetation	Field erosion[#] (Categories[††])	Buffer erosion[#]
1	NO614505	5 (c)	300	Corby	Cd	Sc	1.5	n	Grasses, nettles, thistles	2 (S2)	1
2	NO673533	5 (x)	300	Mountboy	Ca	Wc	2	y	Grasses, nettles, sycamore	1	1
3	NO554463	2 (s)	300	Balrownie	Cd	Sc	2	n	grasses, nettles, thistles	1	1
4	NO545472	2 (s)	100	Balrownie	Ca	Sc	1	y	Grass, nettles	1	1
5	NJ923306	2 (s)	400	Tarves	Cd	Wc	6	n	Grasses, willow	2 (S1)	3
6	NJ891323	2 (s)	100	Tarves	Ca	Wc	5	n	Grasses	2 (S2)	1
7	NJ865325	5 (s)	500	Tarves	Bd	Wc	7	y	Grasses	1	1
8	NJ875323	2 (s)	300	Tarves	Cd	Sc	6	n	Grasses	1	1
9	NJ874318	1 (s)	200	Tarves	Cd	Wc	1	n	Grasses	2 (S2)	1
10	NJ874313	1 (s)	200	Tarves	Ca	Br	1.5	n	Grasses, wild rasps	2 (S1)	1
11	NJ896269	2 (s)	100	Tarves	Cd	Wc	3	n	Grasses	3 (S1)	3
12	NJ876258	5 (s)	100	Tarves	Cd	Wc	5	y	Grasses, shrubs	2 (S2)	3
13	NJ884261	5 (c)	200	Tarves	Cd	Wc	3	y	Grasses	1	1
14	NJ913256	5 (s)	200	Tarves	Cd	Wc	8	y	Grasses, nettles	2 (S2)	2
15	NO553128	10 (x)	200	Rowanhill	Bd		8	n	Trees, grass. roses, gorse	2 (S2)	3
16	NO543123	2 (s)	500	Rowanhill	Cd	Wc	4	n	Trees, grasses	2 (S2)	1
17	NO515128	5 (c)	500	Rowanhill	Cd	Wc	1.5	n	Grasses	2 (T1)	1
18	NO454144	5 (c)	200	Rowanhill	Cd	Wc	3	n	Grasses	1	1
19	NO455124	10 (s)	300	Rowanhill	Bd		12	y	Grasses	1	1

[†]NGR; UK Ordnance Survey National Grid Reference, [‡]Slope form: c, concave; x, convex; s, straight, [§]Land use: Cd, crops worked down slope; Ca, crops worked along slope; Bd, bare soil worked downslope, [¶]Crop type: Sc, Summer cereals; Wc, Winter cereals; Br, Brassicas, [#]Erosion categories: 1, No visible signs; 2, moderate; 3, severe; [††]Categories of erosion: S1, Sheetwash Between crop rows or plough furrows; S2, Sheetwash along topographic hollows; T1, Tramline erosion only, no developed rills

Supplemental Table S2. Abundance rankings and ANOVA results for the top 15 most abundant fragments (according to average abundance across all samples) for (a) bacteria, (b) archaea and (c) fungi. P values are for one-way ANOVA of buffer vs field location on fragment abundances (limited to abundances >1%). Significant values are given in bold. TRFs are named according to number of base pairs.

(a) Bacteria TRFs	Abundance (%)	*p*	(b) Archaea TRFs	Abundance (%)	*p*	(c) Fungi TRFs	Abundance (%)	*p*
306	7.4	0.980	182	65.3	0.093	335	12.4	**0.022**
174	5.2	**0.012**	82	20.2	**0.004**	326	9.1	**0.001**
72	5.1	**0.014**	526	3.8	0.146	327	6.2	0.067
52	4.4	0.226	86	3.2	**0.000**	122	5.0	0.440
42	4.4	**0.000**	45	1.8	0.396	171	4.3	0.837
182	4.0	0.046	75	0.9		124	4.1	**0.047**
175	3.8	**0.000**	44	0.8		328	2.9	0.176
483	2.8	0.417	176	0.6		312	2.5	0.259
157	2.6	0.647	183	0.6		319	2.5	0.063
143	2.6	**0.000**	279	0.4		341	2.3	0.091
314	2.4	0.483	84	0.4		315	2.2	**0.007**
51	2.4	**0.000**	172	0.4		287	2.1	0.898
171	2.4	**0.006**	173	0.4		331	1.8	0.273
173	2.2	0.196	306	0.2		339	1.7	0.175
172	2.1	**0.021**	390	0.2		333	1.6	0.473
Σ abundance	*54%*			*99%*			*61%*	

Summary: The 15 most abundant TRFs cumulatively accounted for 54%, 99% and 61% of bacteria, archaea and fungi total profiles. Archaea were dominated by two TRFs (182 and 82 base pairs), which together accounted for 86% of the profiles. ANOVA performed on the individual TRFs (where their abundance was >1%) showed evidence of a significant buffer *vs* field effect for bacteria TRFs 174, 72, 42, 175, 143, 51, 171 and 172, for archaea TRFs 82 and 86, and for fungi TRFs 335, 326, 124 and 315.

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