

Appendix A

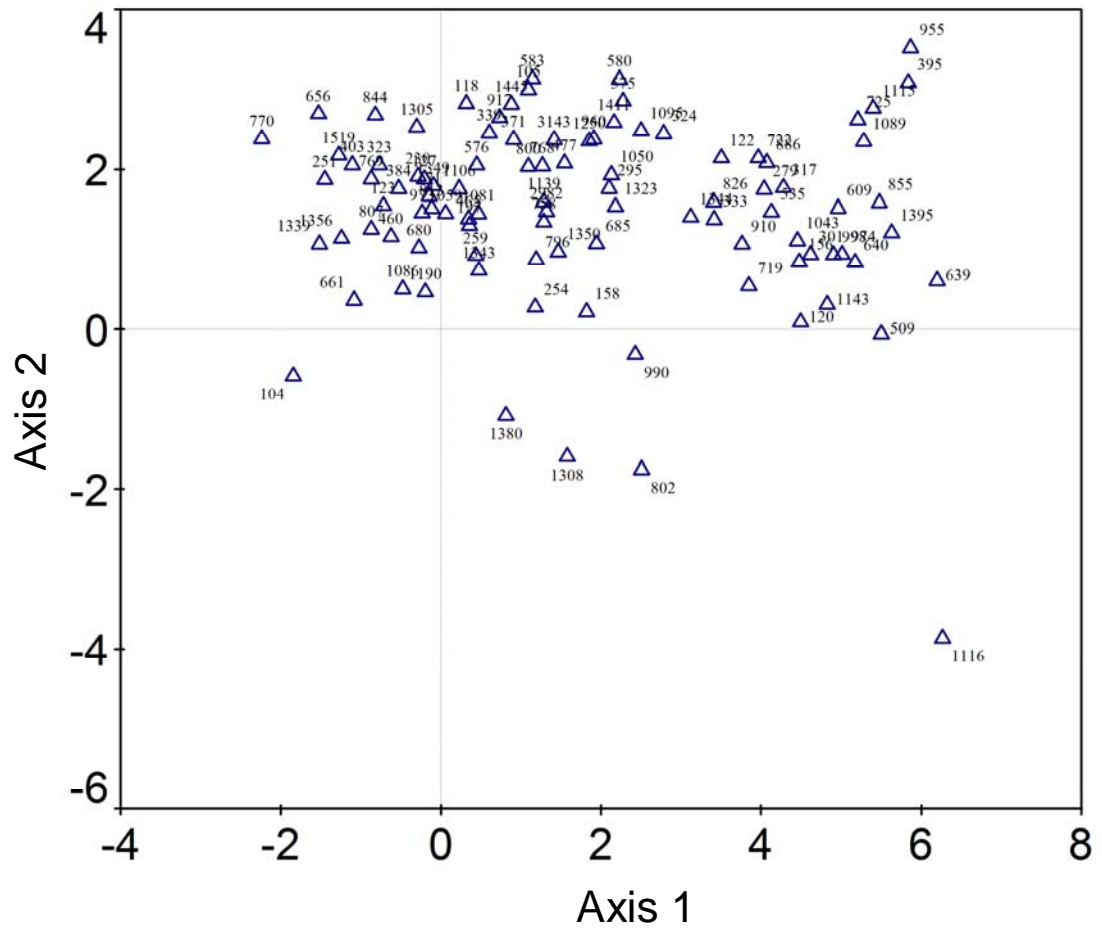


Figure A1. Species ordination plot (DCA) for Cricklade North Meadow (control and treatment areas combined across all seven years of survey.) See Table A1 for key to code numbers.

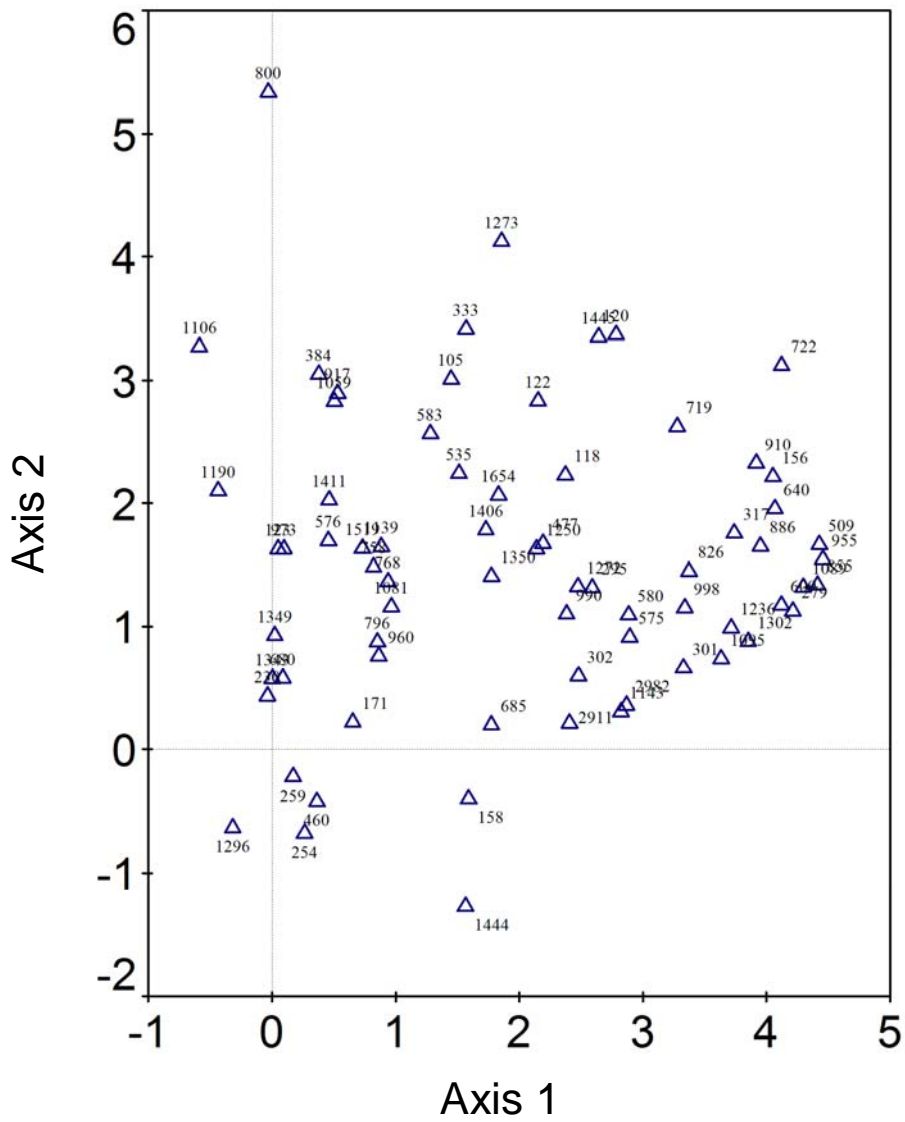


Figure A2. Species ordination plot (DCA) for East Cottingwith Big Ings (control and treatment areas combined across all four years of survey.) See Table A1 for key to code numbers.

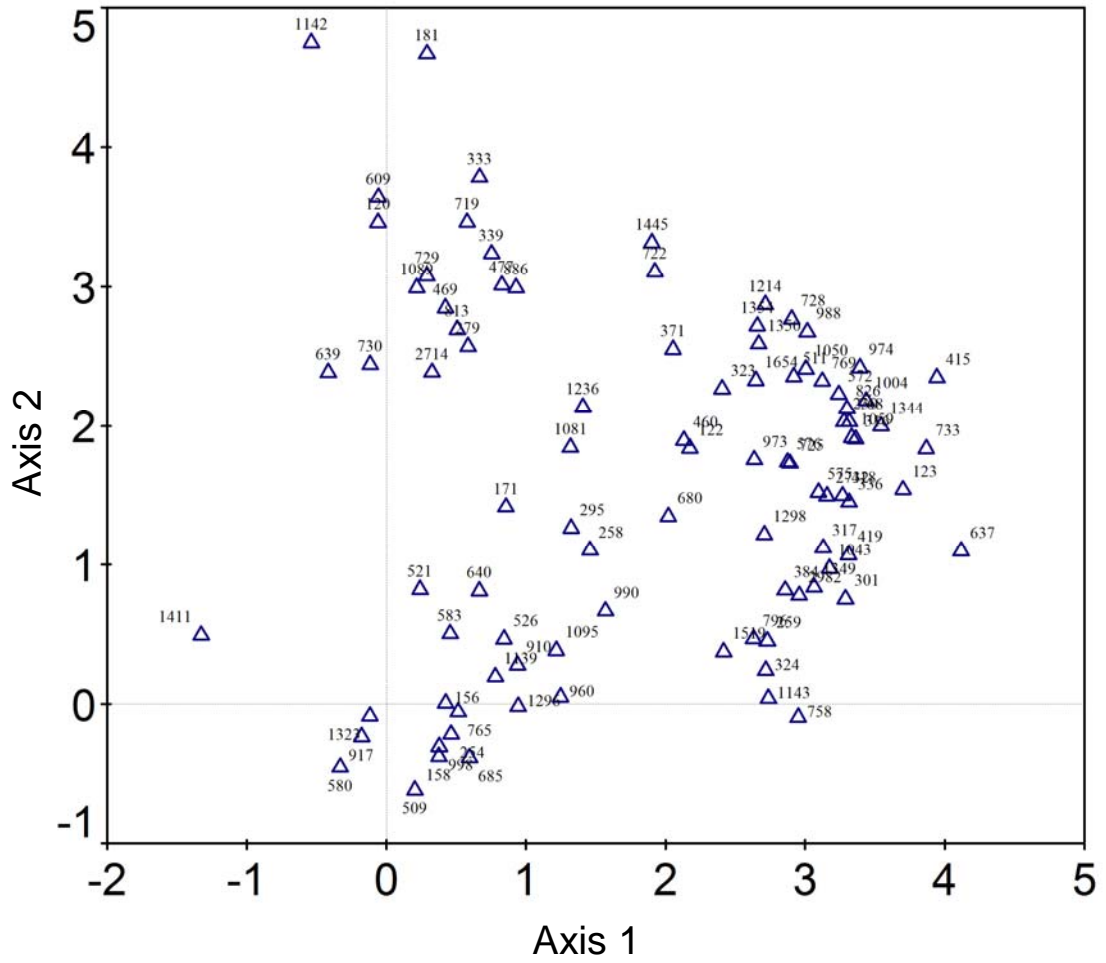


Figure A2. Species ordination plot (DCA) for Moorlinch SSSI (control and treatment areas combined across all five years of survey.) See Table A1 for key to code numbers.

Table A1. List of codes used to annotate Figures A1 – A3, based on those used by the National Vegetation Classification in the Vespan software (Malloch, 1999.)

Code number (NVC)	Scientific name	Common name
105	<i>Achillea ptarmica</i>	sneezewort
118	<i>Elytrigia repens</i>	couch grass
120	<i>Agrostis canina</i>	brown bent
122	<i>Agrostis stolonifera</i>	creeping bent
123	<i>Agrostis capillaris</i>	common bent
156	<i>Alopecurus geniculatus</i>	marsh fox-tail
158	<i>Alopecurus pratensis</i>	meadow fox-tail
171	<i>Anthoxanthum odoratum</i>	sweet vernal grass
230	<i>Bellis perennis</i>	daisy
254	<i>Bromus commutatus</i>	meadow brome
259	<i>Bromus racemosus</i>	smooth brome
279	<i>Caltha palustris</i>	marsh marigold
295	<i>Cardamine pratensis</i>	lady's smock
301	<i>Carex acuta</i>	slender tufted sedge
302	<i>Carex acutiformis</i>	lesser pond sedge
317	<i>Carex disticha</i>	brown sedge
333	<i>Carex nigra</i>	black sedge
384	<i>Cerastium fontanum</i>	common mouse-ear
460	<i>Cynosurus cristatus</i>	crested dog's tail grass
477	<i>Deschampsia cespitosa</i>	tufted hair grass
509	<i>Eleocharis palustris</i>	common spike-rush
535	<i>Equisetum palustre</i>	marsh horsetail
575	<i>Festuca pratensis</i>	meadow fescue
576	<i>Festuca rubra</i>	red fescue
580	<i>Festulolium loliaceum</i>	hybrid fescue
583	<i>Filipendula ulmaria</i>	meadowsweet
609	<i>Galium palustre</i>	marsh bedstraw
640	<i>Glyceria maxima</i>	reed sweet-grass
680	<i>Holcus lanatus</i>	yorkshire fog
685	<i>Hordeum secalinum</i>	meadow barley
719	<i>Juncus acutiflorus</i>	sharp-flowered rush
722	<i>Juncus articulatus</i>	jointed rush
758	<i>Lathyrus pratensis</i>	meadow vetchling
768	<i>Leontodon autumnalis</i>	autumn hawkbit
796	<i>Lolium perenne</i>	perennial rye-grass
800	<i>Lotus corniculatus</i>	common bird's-foot-trefoil
826	<i>Lysimachia nummularia</i>	creeping-jenny
855	<i>Mentha aquatica</i>	water mint
886	<i>Myosotis laxa</i>	tufted forget-me-not
910	<i>Oenanthe fistulosa</i>	tubular water dropwort
917	<i>Ophioglossum vulgatum</i>	common adder's tongue
955	<i>Phalaris arundinacea</i>	reed canary-grass
960	<i>Phleum pratense</i>	timothy
973	<i>Plantago lanceolata</i>	ribwort plantain
990	<i>Poa trivialis</i>	rough meadow-grass
998	<i>Persicaria amphibia</i>	amphibious bistort
1059	<i>Prunella vulgaris</i>	selfheal
1081	<i>Ranunculus acris</i>	meadow buttercup
1089	<i>Ranunculus flammula</i>	lesser spearwort

1095	<i>Ranunculus repens</i>	creeping buttercup
1106	<i>Rhinanthus minor</i>	yellow rattle
1139	<i>Rumex acetosa</i>	common sorrel
1143	<i>Rumex crispus</i>	curled dock
1190	<i>Sanguisorba officinalis</i>	great burnet
1236	<i>Senecio aquaticus</i>	marsh ragwort
1250	<i>Silaum silaus</i>	pepper-saxifrage
1272	<i>Sonchus asper</i>	prickly sow-thistle
1273	<i>Sonchus oleraceus</i>	smooth sow-thistle
1296	<i>Stellaria graminea</i>	lesser stitchwort
1302	<i>Stellaria palustris</i>	marsh stitchwort
1318	<i>Taraxacum officinale</i> agg.	dandelion
1343	<i>Trifolium dubium</i>	lesser trefoil
1349	<i>Trifolium pratense</i>	red clover
1350	<i>Trifolium repens</i>	white clover
1406	<i>Veronica serpyllifolia</i>	thyme-leaved speedwell
1411	<i>Vicia cracca</i>	tufted vetch
1444	<i>Calliergon cordifolium</i>	a moss
1445	<i>Calliergon cuspidatum</i>	a moss
1519	<i>Brachythecium rutabulum</i>	a moss
1654	<i>Drepanocladus aduncus</i>	a moss
2911	<i>Oenanthe silaifolia</i>	narrow-leaved water dropwort

Appendix B

Table B1. Correlation coefficients between species abundance and parameters of soil water regime at Cricklade North Meadow. Absolute values greater than 0.05 are significant at the 5% level (n=1400) those greater than 0.08 at the 1% level.

Species	WL 12m	WL lag	WL 36m
Achillea millefolium	-0.03	-0.03	-0.04
Achillea ptarmica	-0.04	-0.03	-0.05
Agrostis canina	0.02	0.02	0.01
Agrostis capillaris	0.01	0.09	0.05
Agrostis stolonifera	0.23	0.23	0.32
Ajuga reptans	-0.02	0.00	0.00
Alopecurus geniculatus	0.15	0.13	0.15
Alopecurus pratensis	-0.13	-0.21	-0.21
Anthoxanthum odoratum	-0.15	-0.27	-0.26
Arrhenatherum elatius	-0.07	-0.05	-0.07
Avenula pubescens	-0.07	-0.09	-0.10
Bellis perennis	-0.07	-0.12	-0.15
Brachythecium rutabulum	-0.01	-0.06	-0.05
Briza media	-0.04	-0.09	-0.09
Bromus commutatus	-0.04	-0.13	-0.10
Bromus racemosus	-0.16	-0.32	-0.33
Calliargon cuspidatum	0.02	0.03	0.02
Caltha palustris	0.08	0.07	0.10
Cardamine pratensis	0.01	0.09	0.07
Carex acuta	0.18	0.26	0.28
Carex disticha	0.12	0.12	0.17
Carex flacca	-0.01	-0.05	-0.07
Carex hirta	-0.08	-0.01	-0.01
Carex nigra	0.17	0.10	0.13
Carex panicea	-0.01	0.03	0.01
Centaurea nigra	-0.19	-0.17	-0.23
Cerastium fontanum	-0.15	-0.21	-0.24
Chenopodium album	0.07	0.07	0.10
Cynosurus cristatus	-0.12	-0.31	-0.32
Dactylis glomerata	-0.23	-0.28	-0.30
Deschampsia cespitosa	0.00	-0.01	-0.01
Eleocharis palustris	0.17	0.21	0.25
Elytrigia repens	-0.01	-0.03	-0.03
Equisetum palustre	0.15	0.16	0.18
Festuca pratensis	-0.15	-0.07	-0.08
Festuca rubra	-0.34	-0.39	-0.41
Festulolium loliaceum	-0.04	-0.03	-0.04
Filipendula ulmaria	-0.24	-0.16	-0.22
Fritillaria meleagris	-0.24	-0.15	-0.16
Galium palustre	0.17	0.18	0.26
Glyceria fluitans	0.22	0.16	0.22
Glyceria maxima	0.06	0.07	0.10
Heracleum sphondylium	-0.05	-0.09	-0.10
Holcus lanatus	-0.13	-0.26	-0.26
Hordeum secalinum	-0.39	-0.27	-0.35
Juncus acutiflorus	0.07	0.02	0.03
Juncus articulatus	0.02	0.06	0.07

Juncus bufonius	0.04	0.03	0.02
Lathyrus pratensis	-0.32	-0.27	-0.35
Leontodon autumnalis	-0.14	-0.17	-0.19
Leontodon hispidus	-0.07	-0.10	-0.13
Leontodon taraxacoides	0.00	-0.04	-0.03
Leucanthemum vulgare	-0.13	-0.24	-0.26
Lolium perenne	-0.22	-0.10	-0.23
Lotus corniculatus	-0.14	-0.13	-0.15
Lotus uliginosus	0.03	0.01	0.02
Luzula campestris	-0.03	-0.01	-0.02
Lychnis flos-cuculi	0.01	-0.04	-0.04
Lysimachia nummularia	0.10	0.07	0.13
Medicago lupulina	-0.04	-0.05	-0.06
Mentha aquatica	0.08	0.12	0.14
Myosotis laxa caespitosa	0.05	0.12	0.12
Oenanthe fistulosa	0.21	0.21	0.26
Ophioglossum vulgatum	-0.08	-0.07	-0.08
Phalaris arundinacea	0.18	0.22	0.28
Phleum pratense	-0.21	-0.12	-0.16
Plantago lanceolata	-0.11	-0.28	-0.33
Plantago major	0.05	0.11	0.12
Poa trivialis	0.07	0.06	0.03
Polygonum amphibium	0.39	0.37	0.46
Potentilla anserina	0.03	0.05	0.07
Potentilla reptans	-0.06	-0.02	-0.03
Prunella vulgaris	-0.06	-0.10	-0.10
Ranunculus acris	-0.20	-0.18	-0.27
Ranunculus bulbosus	-0.16	-0.16	-0.25
Ranunculus flammula	-0.01	0.00	0.05
Ranunculus repens	-0.16	-0.02	-0.03
Rhinanthus minor	-0.26	-0.27	-0.33
Rorippa amphibia	0.11	0.17	0.21
Rorippa islandica	0.12	0.14	0.16
Rumex acetosa	-0.32	-0.20	-0.32
Rumex crispus	0.29	0.30	0.35
Sanguisorba officinalis	-0.12	-0.11	-0.17
Silaum silaus	-0.13	-0.16	-0.15
Succisa pratensis	-0.01	-0.01	-0.02
Symphytum officinale	-0.03	-0.01	-0.04
Taraxacum officinale agg.	-0.29	-0.33	-0.40
Thalictrum flavum	-0.01	-0.02	-0.02
Tragopogon pratensis	-0.04	-0.07	-0.07
Trifolium dubium	-0.01	-0.02	-0.03
Trifolium fragiferum	0.00	0.11	0.11
Trifolium pratense	-0.24	-0.30	-0.36
Trifolium repens	-0.13	-0.19	-0.25
Trisetum flavescens	-0.14	-0.19	-0.22
Valeriana dioica	-0.03	-0.02	-0.03
Veronica catenata	0.05	0.13	0.13
Vicia cracca	-0.15	-0.13	-0.14

Table B1. Correlation coefficients between species abundance and parameters of soil water regime at East Cottingwith Big Ings. Absolute values greater than 0.08 are significant at the 5% level (n=520) those greater than 0.10 at the 1% level.

Species	WL 12m	WL lag	WL 36m
Achillea ptarmica	-0.06	0.02	0.07
Agrostis canina	-0.13	0.26	0.14
Agrostis capillaris	-0.09	0.08	0.01
Agrostis stolonifera	-0.42	0.24	0.21
Alopecurus geniculatus	-0.01	0.02	-0.03
Alopecurus pratensis	0.39	-0.30	-0.12
Anthoxanthum odoratum	0.24	-0.20	-0.32
Bellis perennis	0.11	-0.13	-0.12
Brachythecium rutabulum	-0.05	0.11	0.03
Bromus commutatus	0.24	-0.31	-0.37
Bromus racemosus	0.15	-0.14	-0.14
Calliergon cordifolium	0.13	-0.03	0.05
Calliergon cuspidatum	-0.11	0.22	0.23
Caltha palustris	0.02	0.03	0.11
Cardamine pratensis	0.14	-0.07	0.14
Carex acuta	0.23	-0.03	0.30
Carex acutiformis	0.04	-0.05	-0.11
Carex disticha	0.02	0.21	0.51
Carex nigra	-0.11	-0.04	-0.03
Cerastium fontanum	-0.14	0.16	-0.04
Cynosurus cristatus	0.30	-0.31	-0.45
Deschampsia cespitosa	-0.02	0.12	0.04
Drepanocladus aduncus	0.13	-0.06	-0.01
Eleocharis palustris	0.05	0.11	0.26
Elytrigia repens	0.13	-0.08	0.07
Equisetum palustre	-0.18	0.09	-0.02
Festuca pratensis	0.05	0.24	0.36
Festuca rubra	0.04	-0.15	-0.28
Festulolium loliaceum	0.07	-0.02	0.02
Filipendula ulmaria	-0.10	0.06	0.11
Galium palustre	0.08	0.11	0.30
Glyceria maxima	0.04	-0.02	-0.02
Holcus lanatus	-0.03	0.08	-0.17
Hordeum secalinum	0.06	0.02	0.11
Lathyrus pratensis	-0.11	0.00	-0.04
Leontodon autumnalis	0.02	-0.05	-0.01
Lolium perenne	0.05	0.14	-0.12
Lotus corniculatus	-0.01	-0.04	-0.03
Lysimachia nummularia	0.02	0.07	0.21
Myosotis laxa	-0.06	0.21	0.34
Oenanthe fistulosa	0.04	-0.01	0.07
Oenanthe silaifolia	0.18	-0.03	0.10
Ophioglossum vulgatum	-0.01	0.09	0.06
Persicaria amphibia	0.05	0.14	0.37
Phalaris arundinacea	0.10	0.08	0.28
Phleum pratense	0.03	-0.09	-0.16
Plantago lanceolata	-0.15	-0.12	-0.29
Poa trivialis	-0.03	0.20	0.13
Prunella vulgaris	0.00	0.00	0.00

Ranunculus acris	-0.14	0.08	-0.11
Ranunculus repens	-0.04	-0.02	-0.05
Rhinanthus minor	-0.10	-0.02	-0.03
Rumex acetosa	-0.12	-0.10	-0.08
Rumex crispus	0.02	0.06	0.17
Sanguisorba officinalis	-0.11	-0.06	-0.20
Senecio aquaticus	-0.09	0.06	0.00
Silaum silaus	-0.04	0.26	0.43
Sonchus oleraceus	-0.05	0.08	0.02
Stellaria graminea	0.04	-0.05	-0.06
Stellaria palustris	0.07	0.00	0.12
Taraxacum officinale agg.	0.29	-0.22	-0.30
Taraxacum officinale agg.	0.29	-0.22	-0.30
Trifolium dubium	0.04	-0.04	-0.20
Trifolium pratense	0.07	-0.17	-0.31
Trifolium repens	-0.05	-0.04	-0.02
Veronica serpyllifolia	0.10	-0.08	0.02
Vicia cracca	-0.07	-0.03	-0.11

Table B3. Correlation coefficients between species abundance and parameters of soil water regime at Moorlinch SSSI. Absolute values greater than 0.08 are significant at the 5% level (n=515) those greater than 0.11 at the 1% level.

Species	WL 12m	WL lag	WL 36m
Agrostis canina	0.11	0.04	0.06
Agrostis capillaris	-0.07	-0.04	-0.02
Agrostis stolonifera	0.11	0.34	0.42
Alopecurus geniculatus	-0.04	-0.03	0.00
Alopecurus pratensis	-0.25	-0.30	-0.30
Anthoxanthum odoratum	-0.08	0.05	0.03
Apium nodiflorum	0.03	-0.02	-0.02
Bare soil (including sand)	0.13	-0.04	0.00
Bellis perennis	-0.20	-0.24	-0.19
Brachythecium rutabulum	-0.09	-0.06	-0.06
Bromus commutatus	-0.24	-0.26	-0.30
Bromus hordeaceus	-0.01	-0.07	-0.05
Bromus racemosus	-0.06	-0.08	-0.05
Calliargon cuspidatum	0.22	0.22	0.31
Caltha palustris	0.02	0.00	0.00
Cardamine pratensis	-0.14	-0.19	-0.32
Carex acuta	-0.01	0.05	0.03
Carex distans	-0.16	-0.23	-0.17
Carex disticha	-0.01	-0.09	-0.05
Carex flacca	0.00	-0.01	-0.02
Carex hirta	-0.19	-0.13	-0.13
Carex nigra	0.41	0.34	0.45
Carex otrubae	-0.03	0.03	0.04
Carex panicea	0.09	0.12	0.10
Centaurea nigra	-0.02	-0.03	-0.05
Cerastium fontanum	-0.30	-0.30	-0.32
Cirsium arvense	0.01	0.02	0.07
Cirsium dissectum	-0.02	-0.03	-0.03
Cirsium palustre	-0.14	-0.08	-0.06
Cirsium vulgare	-0.05	0.01	0.02
Cynosurus cristatus	-0.05	-0.08	-0.09
Dactylorhiza praetermissa	0.00	0.03	0.00
Deschampsia cespitosa	0.00	0.11	0.12
Drepanocladus aduncus	0.01	0.01	0.05
Eleocharis palustris	0.11	-0.04	-0.02
Eleocharis uniglumis	-0.07	-0.08	-0.08
Epilobium hirsutum	-0.01	-0.05	-0.08
Epilobium parviflorum	-0.05	-0.03	-0.06
Festuca arundinacea	-0.12	0.00	0.05
Festuca pratensis	-0.09	0.09	0.16
Festuca rubra	-0.23	-0.09	-0.11
Filipendula ulmaria	-0.09	-0.07	-0.11
Galium palustre	0.28	0.46	0.49
Glyceria fluitans	0.23	0.04	-0.01
Glyceria maxima	0.06	-0.03	-0.02
Holcus lanatus	-0.14	0.02	0.04
Hordeum secalinum	-0.26	-0.27	-0.29
Isolepis setacea	-0.01	-0.01	-0.03
Juncus acutiflorus	-0.01	0.12	0.10

<i>Juncus articulatus</i>	0.18	0.05	0.09
<i>Juncus bufonius</i>	-0.04	-0.02	-0.02
<i>Juncus compressus</i>	-0.01	0.04	0.01
<i>Juncus conglomeratus</i>	-0.02	-0.07	-0.07
<i>Juncus effusus</i>	0.36	0.20	0.29
<i>Juncus inflexus</i>	-0.12	-0.08	0.05
<i>Juncus subnodulosus</i>	-0.12	-0.11	-0.07
<i>Lathyrus pratensis</i>	-0.10	-0.06	-0.07
<i>Lemna minor</i>	0.06	0.05	0.02
<i>Leontodon autumnalis</i>	-0.12	-0.10	-0.06
<i>Leontodon hispidus</i>	-0.13	-0.12	-0.11
<i>Lolium perenne</i>	-0.27	-0.15	-0.17
<i>Lychnis flos-cuculi</i>	0.08	0.07	0.05
<i>Lysimachia nummularia</i>	-0.06	-0.04	-0.04
<i>Myosotis laxa</i>	0.17	0.12	0.12
<i>Oenanthe fistulosa</i>	0.03	0.06	0.03
<i>Ophioglossum vulgatum</i>	0.01	-0.06	-0.06
<i>Persicaria amphibia</i>	-0.13	-0.30	-0.35
<i>Persicaria hydropiper</i>	0.04	-0.01	0.02
<i>Phleum pratense</i>	-0.06	0.04	0.03
<i>Plantago lanceolata</i>	-0.21	-0.25	-0.24
<i>Plantago major</i>	-0.06	-0.02	0.02
<i>Poa pratensis</i>	-0.05	-0.01	0.01
<i>Poa trivialis</i>	-0.05	-0.17	-0.18
<i>Potentilla anserina</i>	-0.05	0.00	0.02
<i>Potentilla reptans</i>	-0.08	-0.04	-0.02
<i>Prunella vulgaris</i>	-0.14	-0.15	-0.12
<i>Ranunculus acris</i>	-0.04	-0.15	-0.18
<i>Ranunculus flammula</i>	-0.05	-0.01	0.00
<i>Ranunculus repens</i>	0.13	-0.13	-0.11
<i>Rumex acetosa</i>	-0.28	-0.35	-0.35
<i>Rumex crispus</i>	-0.03	0.02	0.02
<i>Senecio aquaticus</i>	0.24	-0.09	-0.06
<i>Stellaria graminea</i>	-0.13	-0.06	-0.12
<i>Stellaria media</i>	-0.02	0.01	0.00
<i>Taraxacum officinale</i> agg.	-0.19	-0.36	-0.43
<i>Taraxacum officinale</i> agg.	-0.19	-0.36	-0.43
<i>Thalictrum flavum</i>	0.00	-0.04	-0.05
<i>Trifolium fragiferum</i>	-0.07	0.00	0.03
<i>Trifolium pratense</i>	-0.16	-0.22	-0.23
<i>Trifolium repens</i>	-0.08	0.16	0.24
<i>Triglochin palustre</i>	-0.01	-0.03	0.00
<i>Vicia cracca</i>	0.02	-0.06	-0.05