APPENDIX 1

Deposition trend data

1.1

Linear trend analysis of rainfall at UK monitoring sites 1986-2001 (mm y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	0.7	5.4	0.13	14	0.90	
High Muffles	14.8	7.2	2.06	14	0.06	
Preston Montford	5.8	5.0	1.16	14	0.27	
Flatford Mill	0.9	6.5	0.14	14	0.89	
Thorganby	4.9	5.6	0.88	14	0.40	
Jenny Hurn	2.6	5.3	0.48	14	0.64	
Wardlow Hay Cop	4.6	8.5	0.54	14	0.60	
Bottesford	2.5	6.4	0.40	14	0.70	
Woburn	-3.5	6.5	0.53	14	0.60	
Compton	10.9	5.9	1.84	14	0.09	
Driby	-1.9	5.9	0.32	14	0.75	
Barcombe Mills	11.8	8.2	1.44	14	0.17	
Glen Dye	14.2	10.3	1.38	13	0.19	
Whiteadder	-0.1	7.4	0.02	13	0.99	
Redesdale	-7.4	7.9	0.93	14	0.37	
Bannisdale	-13.9	17.3	0.80	14	0.44	
Cow Green Reservoir	20.1	11.2	1.79	13	0.10	
Hillsborough Forest	-0.2	9.0	0.02	11	0.98	
Yarner Wood	6.4	7.1	0.90	14	0.38	
Goonhilly	1.2	5.4	0.22	14	0.83	
Eskdalemuir	4.6	9.9	0.47	14	0.65	
Loch Dee	-35.7	19.1	1.87	13	0.09	
Beddgelert (up to 1996)	-108.1	47.9	2.26	9	0.05	
Balquhidder (1&2)	-29.1	15.3	1.90	14	0.08	
Pumlumon	8.4	27.1	0.31	11	0.76	
Tycanol Wood	3.3	8.1	0.41	14	0.69	
Llyn Brianne	17.2	12.9	1.33	13	0.21	
Achanarras	-12.1	6.4	1.89	14	0.08	
Polloch	-37.4	30.1	1.24	9	0.25	
Lough Navar	-7.3	12.6	0.58	14	0.57	
River Mharcaidh	-0.6	6.8	0.08	14	0.93	
Strathvaich Dam	-4.1	14.3	0.29	13	0.78	

1.2

Linear trend analysis of H^+ (acidity) in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-1.41	0.29	4.80	13	0.00	-1.41
High Muffles	-2.59	0.38	6.82	13	0.00	-2.59
Preston Montford	-1.15	0.53	2.16	13	0.05	-1.15
Flatford Mill	-1.11	0.28	4.02	13	0.00	-1.11
Thorganby	-4.35	0.72	6.01	10	0.00	-4.35
Jenny Hurn	-3.92	0.67	5.84	13	0.00	-3.92
Wardlow Hay Cop	-1.60	0.34	4.63	13	0.00	-1.60
Bottesford	-4.20	0.70	5.96	13	0.00	-4.20
Woburn	-1.91	0.33	5.84	13	0.00	-1.91
Compton	-1.17	0.45	2.62	13	0.02	-1.17
Driby	-1.71	0.33	5.17	13	0.00	-1.71
Barcombe Mills	-0.25	0.21	1.18	13	0.26	
Glen Dye	-0.81	0.51	1.59	12	0.14	
Whiteadder	-1.30	0.34	3.81	12	0.00	-1.30
Redesdale	-1.54	0.34	4.55	13	0.00	-1.54
Bannisdale	-0.80	0.26	3.08	13	0.01	-0.80
Cow Green Reservoir	-1.24	0.33	3.72	12	0.00	-1.24
Hillsborough Forest	-0.42	0.25	1.70	10	0.12	
Yarner Wood	0.01	0.18	0.04	13	0.97	
Goonhilly	-0.12	0.22	0.52	13	0.61	
Eskdalemuir	-0.59	0.20	2.96	13	0.01	-0.59
Loch Dee	-0.67	0.25	2.74	13	0.02	-0.67
Beddgelert (up to 1996)	-0.58	0.20	2.88	9	0.02	-0.58
Balquhidder (1&2)	-0.48	0.29	1.68	13	0.12	
Pumlumon	-0.53	0.21	2.52	10	0.03	-0.53
Tycanol Wood	-0.35	0.15	2.32	13	0.04	-0.35
Llyn Brianne	-0.60	0.19	3.14	12	0.01	-0.60
Achanarras	-0.15	0.26	0.59	13	0.56	
Polloch	-0.45	0.25	1.83	8	0.11	
Lough Navar	-0.26	0.09	2.96	13	0.01	-0.26
River Mharcaidh	-0.58	0.13	4.50	13	0.00	-0.58
Strathvaich Dam	-0.39	0.16	2.44	12	0.03	-0.39

1.3

Linear trend analysis of Na^+ in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.7	0.6	1.20	14	0.25	
High Muffles	1.0	1.3	0.78	14	0.45	
Preston Montford	-2.9	1.8	1.60	14	0.13	
Flatford Mill	-1.4	0.7	2.12	14	0.05	
Thorganby	-1.2	0.6	2.07	11	0.06	
Jenny Hurn	-2.6	1.0	2.72	14	0.02	-2.6
Wardlow Hay Cop	-2.1	1.5	1.40	14	0.18	
Bottesford	-2.1	0.7	3.26	14	0.01	-2.1
Woburn	-2.0	0.7	2.82	14	0.01	-2.0
Compton	-1.8	1.1	1.58	14	0.14	
Driby	-0.6	1.1	0.55	14	0.59	
Barcombe Mills	-4.8	3.3	1.44	14	0.17	
Glen Dye	1.5	1.1	1.46	13	0.17	
Whiteadder	1.1	1.2	0.94	13	0.37	
Redesdale	-1.7	0.9	1.84	14	0.09	
Bannisdale	-1.6	1.8	0.86	14	0.40	
Cow Green Reservoir	1.6	0.9	1.74	13	0.11	
Hillsborough Forest	-2.1	1.4	1.51	11	0.16	
Yarner Wood	-3.4	1.9	1.73	14	0.11	
Goonhilly	0.2	3.9	0.06	14	0.95	
Eskdalemuir	0.7	1.0	0.73	14	0.48	
Loch Dee	-1.7	1.4	1.16	14	0.26	
Beddgelert (up to 1996)	-1.3	3.3	0.40	9	0.70	
Balquhidder (1&2)	0.1	1.6	0.05	14	0.96	
Pumlumon	-2.0	1.5	1.31	11	0.22	
Tycanol Wood	-0.3	2.3	0.13	14	0.90	
Llyn Brianne	-0.2	1.2	0.17	13	0.86	
Achanarras	-0.1	1.9	0.05	14	0.96	
Polloch	-2.7	3.0	0.92	9	0.38	
Lough Navar	-6.7	3.0	2.27	14	0.04	-6.7
River Mharcaidh	-0.1	1.5	0.10	14	0.93	
Strathvaich Dam	0.8	2.2	0.37	13	0.71	

1.4

Linear trend analysis of Cl^- in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-1.5	0.7	2.10	14	0.05	
High Muffles	-0.8	1.6	0.46	14	0.65	
Preston Montford	-4.1	2.1	1.97	14	0.07	
Flatford Mill	-2.0	0.7	2.91	14	0.01	-2.0
Thorganby	-4.7	0.9	5.27	11	0.00	-4.7
Jenny Hurn	-6.3	1.2	5.13	14	0.00	-6.3
Wardlow Hay Cop	-4.0	1.7	2.32	14	0.04	-4.0
Bottesford	-4.3	0.8	5.50	14	0.00	-4.3
Woburn	-2.8	0.8	3.46	14	0.00	-2.8
Compton	-2.5	1.4	1.82	14	0.09	
Driby	-1.9	1.3	1.50	14	0.16	
Barcombe Mills	-6.4	4.0	1.63	14	0.13	
Glen Dye	1.5	1.2	1.28	13	0.22	
Whiteadder	1.0	1.3	0.77	13	0.46	
Redesdale	-2.4	1.1	2.26	14	0.04	-2.4
Bannisdale	-2.5	2.1	1.18	14	0.26	
Cow Green Reservoir	1.4	1.0	1.35	13	0.20	
Hillsborough Forest	-2.7	1.6	1.63	11	0.13	
Yarner Wood	-4.3	2.3	1.87	14	0.08	
Goonhilly	-0.3	4.7	0.06	14	0.96	
Eskdalemuir	0.4	1.1	0.33	14	0.75	
Loch Dee	-2.6	1.7	1.57	14	0.14	
Beddgelert (up to 1996)	-2.0	4.0	0.49	9	0.64	
Balquhidder (1&2)	-0.2	1.9	0.13	14	0.90	
Pumlumon	-2.4	1.8	1.35	11	0.21	
Tycanol Wood	-0.6	2.6	0.25	14	0.81	
Llyn Brianne	-0.6	1.4	0.39	13	0.70	
Achanarras	-0.6	2.3	0.24	14	0.81	
Polloch	-2.5	3.5	0.71	9	0.50	
Lough Navar	-8.8	3.7	2.39	14	0.03	-8.8
River Mharcaidh	-0.2	1.6	0.10	14	0.92	
Strathvaich Dam	0.7	2.3	0.29	13	0.78	

1.5

Linear trend analysis of non-marine Cl^- in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.62	0.11	5.41	14	0.00	-0.62
High Muffles	-1.97	0.49	4.06	14	0.00	-1.97
Preston Montford	-0.80	0.15	5.46	14	0.00	-0.80
Flatford Mill	-0.30	0.24	1.23	14	0.24	
Thorganby	-3.39	0.47	7.20	11	0.00	-3.39
Jenny Hurn	-3.25	0.43	7.59	14	0.00	-3.25
Wardlow Hay Cop	-1.56	0.21	7.45	14	0.00	-1.56
Bottesford	-1.82	0.28	6.44	14	0.00	-1.82
Woburn	-0.45	0.17	2.59	14	0.02	-0.45
Compton	-0.48	0.31	1.53	14	0.15	
Driby	-1.25	0.31	4.06	14	0.00	-1.25
Barcombe Mills	-0.85	0.27	3.15	14	0.01	-0.85
Glen Dye	-0.24	0.18	1.34	13	0.20	
Whiteadder	-0.30	0.18	1.62	13	0.13	
Redesdale	-0.37	0.16	2.37	14	0.03	-0.37
Bannisdale	-0.67	0.17	3.87	14	0.00	-0.67
Cow Green Reservoir	-0.48	0.11	4.52	13	0.00	-0.48
Hillsborough Forest	-0.15	0.20	0.77	11	0.46	
Yarner Wood	-0.37	0.20	1.81	14	0.09	
Goonhilly	-0.54	0.43	1.26	14	0.23	
Eskdalemuir	-0.47	0.14	3.45	14	0.00	-0.47
Loch Dee	-0.70	0.24	2.91	14	0.01	-0.70
Beddgelert (up to 1996)	-0.43	0.39	1.11	9	0.30	
Balquhidder (1&2)	-0.33	0.17	1.92	14	0.08	
Pumlumon	-0.10	0.17	0.60	11	0.56	
Tycanol Wood	-0.28	0.28	1.00	14	0.33	
Llyn Brianne	-0.32	0.15	2.11	13	0.06	
Achanarras	-0.44	0.37	1.19	14	0.25	
Polloch	0.72	0.51	1.42	9	0.19	
Lough Navar	-0.98	0.59	1.66	14	0.12	
River Mharcaidh	0.00	0.16	0.02	14	0.99	
Strathvaich Dam	-0.29	0.39	0.73	13	0.48	

1.6

Linear trend analysis of non-marine SO_4^{2-} in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-3.24	0.34	9.46	14	0.00	-3.24
High Muffles	-2.63	0.41	6.47	14	0.00	-2.63
Preston Montford	-2.15	0.60	3.58	14	0.00	-2.15
Flatford Mill	-3.12	0.41	7.55	14	0.00	-3.12
Thorganby	-2.71	0.34	7.88	11	0.00	-2.71
Jenny Hurn	-4.13	0.53	7.83	14	0.00	-4.13
Wardlow Hay Cop	-2.55	0.46	5.57	14	0.00	-2.55
Bottesford	-4.30	0.44	9.79	14	0.00	-4.30
Woburn	-3.34	0.34	9.72	14	0.00	-3.34
Compton	-3.62	0.53	6.80	14	0.00	-3.62
Driby	-2.83	0.45	6.35	14	0.00	-2.83
Barcombe Mills	-1.70	0.26	6.56	14	0.00	-1.70
Glen Dye	-1.46	0.51	2.87	13	0.01	-1.46
Whiteadder	-1.96	0.39	4.99	13	0.00	-1.96
Redesdale	-1.81	0.38	4.80	14	0.00	-1.81
Bannisdale	-1.17	0.27	4.39	14	0.00	-1.17
Cow Green Reservoir	-1.15	0.26	4.41	13	0.00	-1.15
Hillsborough Forest	-1.60	0.45	3.58	11	0.00	-1.60
Yarner Wood	-0.68	0.28	2.38	14	0.03	-0.68
Goonhilly	-0.70	0.26	2.71	14	0.02	-0.70
Eskdalemuir	-0.92	0.14	6.74	14	0.00	-0.92
Loch Dee	-0.91	0.24	3.71	14	0.00	-0.91
Beddgelert (up to 1996)	-1.84	0.77	2.40	9	0.04	-1.84
Balquhidder (1&2)	-0.72	0.28	2.56	14	0.02	-0.72
Pumlumon	-0.87	0.23	3.72	11	0.00	-0.87
Tycanol Wood	-0.60	0.16	3.70	14	0.00	-0.60
Llyn Brianne	-0.78	0.18	4.41	13	0.00	-0.78
Achanarras	-1.04	0.18	5.91	14	0.00	-1.04
Polloch	-0.93	0.19	4.98	9	0.00	-0.93
Lough Navar	-0.40	0.11	3.53	14	0.00	-0.40
River Mharcaidh	-0.73	0.17	4.27	14	0.00	-0.73
Strathvaich Dam	-0.49	0.16	3.06	13	0.01	-0.49

1.7

Linear trend analysis of NO_3^- in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.75	0.22	3.34	14	0.01	-0.75
High Muffles	-0.61	0.22	2.74	14	0.02	-0.61
Preston Montford	-0.25	0.35	0.70	14	0.50	
Flatford Mill	-0.65	0.29	2.28	14	0.04	-0.65
Thorganby	-0.71	0.19	3.73	11	0.00	-0.71
Jenny Hurn	-0.54	0.22	2.47	14	0.03	-0.54
Wardlow Hay Cop	-0.12	0.28	0.44	14	0.67	
Bottesford	-0.86	0.22	3.90	14	0.00	-0.86
Woburn	-0.41	0.26	1.54	14	0.15	
Compton	-0.99	0.22	4.42	14	0.00	-0.99
Driby	-0.48	0.25	1.94	14	0.07	
Barcombe Mills	-0.57	0.23	2.45	14	0.03	-0.57
Glen Dye	-0.07	0.34	0.21	13	0.84	
Whiteadder	-0.64	0.29	2.23	13	0.04	-0.64
Redesdale	-0.18	0.22	0.84	14	0.42	
Bannisdale	0.11	0.14	0.77	14	0.46	
Cow Green Reservoir	-0.17	0.15	1.16	13	0.27	
Hillsborough Forest	-0.11	0.35	0.30	11	0.77	
Yarner Wood	0.10	0.31	0.33	14	0.75	
Goonhilly	0.02	0.25	0.07	14	0.95	
Eskdalemuir	0.01	0.12	0.06	14	0.95	
Loch Dee	-0.05	0.15	0.37	14	0.72	
Beddgelert (up to 1996)	-0.07	0.24	0.31	9	0.77	
Balquhidder (1&2)	0.03	0.21	0.15	14	0.89	
Pumlumon	-0.23	0.22	1.06	11	0.31	
Tycanol Wood	-0.01	0.14	0.10	14	0.92	
Llyn Brianne	-0.04	0.15	0.30	13	0.77	
Achanarras	-0.39	0.19	2.07	14	0.06	
Polloch	-0.38	0.14	2.66	9	0.03	-0.38
Lough Navar	0.03	0.13	0.24	14	0.81	
River Mharcaidh	0.04	0.13	0.30	14	0.77	
Strathvaich Dam	-0.06	0.09	0.65	13	0.53	

1.8

Linear trend analysis of NH_4^+ in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-1.34	0.40	3.32	14	0.01	-1.34
High Muffles	-0.66	0.43	1.53	14	0.15	
Preston Montford	-0.85	0.47	1.83	14	0.09	
Flatford Mill	-1.05	0.48	2.20	13	0.05	-1.05
Thorganby	-0.78	0.26	2.93	10	0.02	-0.78
Jenny Hurn	-0.52	0.55	0.95	14	0.36	
Wardlow Hay Cop	-0.09	0.44	0.21	14	0.83	
Bottesford	-0.59	0.44	1.34	14	0.20	
Woburn	-0.86	0.45	1.93	14	0.08	
Compton	-1.63	0.61	2.68	14	0.02	-1.63
Driby	-1.20	0.46	2.60	14	0.02	-1.20
Barcombe Mills	-1.56	0.37	4.20	14	0.00	-1.56
Glen Dye	-0.19	0.36	0.53	13	0.61	
Whiteadder	-0.40	0.32	1.25	13	0.23	
Redesdale	0.31	0.41	0.76	14	0.46	
Bannisdale	-0.11	0.24	0.48	14	0.64	
Cow Green Reservoir	0.06	0.21	0.28	13	0.79	
Hillsborough Forest	-0.46	0.60	0.78	11	0.45	
Yarner Wood	-0.02	0.39	0.06	14	0.96	
Goonhilly	-0.21	0.30	0.70	14	0.50	
Eskdalemuir	0.04	0.19	0.19	14	0.85	
Loch Dee	-0.42	0.23	1.84	14	0.09	
Beddgelert (up to 1996)	0.21	0.17	1.25	9	0.24	
Balquhidder (1&2)	0.03	0.20	0.14	14	0.89	
Pumlumon	-0.45	0.28	1.58	11	0.14	
Tycanol Wood	0.08	0.17	0.49	14	0.63	
Llyn Brianne	0.00	0.16	0.01	13	0.99	
Achanarras	-0.76	0.34	2.25	14	0.04	-0.76
Polloch	-0.28	0.13	2.05	9	0.07	
Lough Navar	0.11	0.12	0.89	14	0.39	
River Mharcaidh	-0.04	0.10	0.36	14	0.72	
Strathvaich Dam	0.02	0.05	0.33	13	0.75	

1.9

Linear trend analysis of Ca^{2+} in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.93	0.56	1.66	6	0.15	
High Muffles	-0.61	0.34	1.79	6	0.12	
Preston Montford	-0.56	0.58	0.97	6	0.37	
Flatford Mill	-1.12	0.36	3.10	6	0.02	-1.12
Thorganby	-0.35	0.44	0.80	4	0.47	
Jenny Hurn	-2.67	0.64	4.17	6	0.01	-2.67
Wardlow Hay Cop	-1.66	0.73	2.27	6	0.06	
Bottesford	-1.84	0.49	3.79	6	0.01	-1.84
Woburn	-1.34	0.37	3.61	6	0.01	-1.34
Compton	-1.46	0.62	2.35	6	0.06	
Driby	-0.81	0.49	1.65	6	0.15	
Barcombe Mills	-0.60	0.39	1.52	6	0.18	
Glen Dye	-0.25	0.11	2.36	5	0.07	
Whiteadder	-0.53	0.26	2.06	5	0.10	
Redesdale	-0.50	0.26	1.97	6	0.10	
Bannisdale	-0.37	0.13	2.89	6	0.03	-0.37
Cow Green Reservoir	-0.10	0.24	0.42	5	0.69	
Hillsborough Forest	-0.29	0.17	1.73	3	0.18	
Yarner Wood	-0.32	0.17	1.95	6	0.10	
Goonhilly	-0.01	0.40	0.01	6	0.99	
Eskdalemuir	-0.21	0.35	0.59	6	0.57	
Loch Dee	-0.17	0.11	1.56	6	0.17	
Beddgelert (up to 1996)	0.34	0.40	0.85	4	0.44	
Balquhidder (1&2)	-0.08	0.14	0.57	6	0.59	
Pumlumon	-0.29	0.18	1.59	3	0.21	
Tycanol Wood	-0.34	0.51	0.66	6	0.53	
Llyn Brianne	-0.04	0.26	0.16	5	0.88	
Achanarras	-0.40	0.18	2.18	6	0.07	
Polloch	-0.86	0.06	13.35	1	0.05	-0.86
Lough Navar	-0.23	0.36	0.63	6	0.55	
River Mharcaidh	-0.23	0.06	3.68	6	0.01	-0.23
Strathvaich Dam	-0.03	0.19	0.13	5	0.90	

Note that data are missing for the period 1992-1999.

1.10

Linear trend analysis of non-marine Ca^{2+} in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.90	0.53	1.71	6	0.14	
High Muffles	-0.60	0.30	1.98	6	0.10	
Preston Montford	-0.43	0.48	0.89	6	0.41	
Flatford Mill	-1.05	0.34	3.13	6	0.02	-1.05
Thorganby	-0.28	0.43	0.65	4	0.55	
Jenny Hurn	-2.53	0.62	4.12	6	0.01	-2.53
Wardlow Hay Cop	-1.56	0.66	2.38	6	0.06	
Bottesford	-1.74	0.49	3.56	6	0.01	-1.73
Woburn	-1.23	0.37	3.30	6	0.02	-1.23
Compton	-1.35	0.61	2.21	6	0.07	
Driby	-0.77	0.46	1.67	6	0.15	
Barcombe Mills	-0.36	0.34	1.07	6	0.33	
Glen Dye	-0.27	0.08	3.55	5	0.02	-0.27
Whiteadder	-0.54	0.26	2.05	5	0.10	
Redesdale	-0.40	0.25	1.57	6	0.17	
Bannisdale	-0.24	0.04	5.97	6	0.00	-0.24
Cow Green Reservoir	-0.08	0.20	0.40	5	0.71	
Hillsborough Forest	-0.17	0.18	0.93	3	0.42	
Yarner Wood	-0.19	0.11	1.71	6	0.14	
Goonhilly	0.00	0.11	0.04	6	0.97	
Eskdalemuir	-0.23	0.33	0.68	6	0.52	
Loch Dee	-0.06	0.08	0.74	6	0.49	
Beddgelert (up to 1996)	-0.34	0.49	0.70	4	0.52	
Balquhidder (1&2)	-0.02	0.10	0.23	6	0.82	
Pumlumon	-0.14	0.16	0.93	3	0.42	
Tycanol Wood	-0.30	0.38	0.79	6	0.46	
Llyn Brianne	-0.06	0.16	0.35	5	0.74	
Achanarras	-0.41	0.15	2.68	6	0.04	-0.41
Polloch	-0.54	0.05	10.57	1	0.06	
Lough Navar	0.06	0.25	0.25	6	0.81	
River Mharcaidh	-0.19	0.05	4.05	6	0.01	-0.19
Strathvaich Dam	-0.05	0.10	0.49	5	0.65	

Note that data are missing for the period 1992-1999.

1.11

Linear trend analysis of Mg^{2+} in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.29	0.27	1.06	6	0.33	
High Muffles	-0.17	0.37	0.45	6	0.67	
Preston Montford	-0.77	0.77	1.00	6	0.36	
Flatford Mill	-0.70	0.33	2.10	6	0.08	
Thorganby	-0.58	0.23	2.58	4	0.06	
Jenny Hurn	-1.26	0.48	2.63	6	0.04	-1.26
Wardlow Hay Cop	-0.76	0.59	1.29	6	0.24	
Bottesford	-0.87	0.28	3.13	6	0.02	-0.87
Woburn	-0.40	0.36	1.09	6	0.32	
Compton	-0.73	0.41	1.76	6	0.13	
Driby	-0.39	0.36	1.07	6	0.33	
Barcombe Mills	-1.33	1.26	1.05	6	0.34	
Glen Dye	0.00	0.24	0.02	5	0.99	
Whiteadder	0.02	0.44	0.03	5	0.98	
Redesdale	-0.63	0.29	2.20	6	0.07	
Bannisdale	-0.81	0.67	1.22	6	0.27	
Cow Green Reservoir	-0.15	0.39	0.39	5	0.72	
Hillsborough Forest	-0.73	0.42	1.73	3	0.18	
Yarner Wood	-0.81	0.78	1.03	6	0.34	
Goonhilly	-0.01	1.65	0.00	6	1.00	
Eskdalemuir	-0.11	0.35	0.32	6	0.76	
Loch Dee	-0.52	0.58	0.91	6	0.40	
Beddgelert (up to 1996)	3.51	1.63	2.15	4	0.10	
Balquhidder (1&2)	-0.39	0.44	0.90	6	0.40	
Pumlumon	-0.85	0.39	2.17	3	0.12	
Tycanol Wood	-0.32	0.93	0.34	6	0.75	
Llyn Brianne	0.03	0.64	0.05	5	0.96	
Achanarras	-0.10	0.63	0.16	6	0.88	
Polloch	-1.77	0.38	4.62	1	0.14	
Lough Navar	-1.42	1.29	1.10	6	0.31	
River Mharcaidh	-0.21	0.34	0.63	6	0.55	
Strathvaich Dam	0.24	0.63	0.38	5	0.72	

Note that data are missing for the period 1992-1999.

1.12

Linear trend analysis of non-marine Mg^{2+} in precipitation at UK monitoring sites 1986-2001 (μeq l^{-1} y^{-1}). Significant trends ($p<0.05$) are listed in the final column.

site	slope	se	t_val	t_df	t_prob	Sigslope
Stoke Ferry	-0.13	0.08	1.66	6	0.15	
High Muffles	-0.14	0.21	0.65	6	0.54	
Preston Montford	-0.09	0.11	0.83	6	0.44	
Flatford Mill	-0.35	0.12	2.85	6	0.03	-0.35
Thorganby	-0.19	0.08	2.34	4	0.08	
Jenny Hurn	-0.53	0.18	2.96	6	0.03	-0.53
Wardlow Hay Cop	-0.23	0.07	3.32	6	0.02	-0.23
Bottesford	-0.32	0.08	3.93	6	0.01	-0.32
Woburn	0.17	0.27	0.65	6	0.54	
Compton	-0.19	0.10	2.01	6	0.09	
Driby	-0.21	0.11	1.80	6	0.12	
Barcombe Mills	-0.10	0.09	1.14	6	0.30	
Glen Dye	-0.08	0.06	1.30	5	0.25	
Whiteadder	-0.06	0.09	0.70	5	0.51	
Redesdale	-0.07	0.09	0.76	6	0.47	
Bannisdale	-0.13	0.05	2.54	6	0.04	-0.13
Cow Green Reservoir	-0.04	0.05	0.88	5	0.42	
Hillsborough Forest	-0.07	0.07	0.95	3	0.41	
Yarner Wood	-0.10	0.05	1.91	6	0.11	
Goonhilly	-0.12	0.13	0.93	5	0.40	
Eskdalemuir	-0.20	0.14	1.39	6	0.21	
Loch Dee	-0.10	0.09	1.20	5	0.28	
Beddgelert (up to 1996)	-0.03	0.25	0.12	4	0.91	
Balquhidder (1&2)	-0.11	0.02	5.47	6	0.00	-0.11
Pumlumon	-0.07	0.02	3.39	3	0.04	-0.07
Tycanol Wood	-0.11	0.05	2.06	6	0.09	
Llyn Brianne	-0.05	0.08	0.64	5	0.55	
Achanarras	-0.19	0.14	1.34	6	0.23	
Polloch	-0.12	0.32	0.40	1	0.76	
Lough Navar	-0.25	0.25	1.00	5	0.37	
River Mharcaidh	-0.07	0.06	1.09	5	0.33	
Strathvaich Dam	-0.14	0.07	2.02	4	0.11	

Note that data are missing for the period 1992-1999, and also that the estimation of non-marine Mg^{2+} is not very accurate.

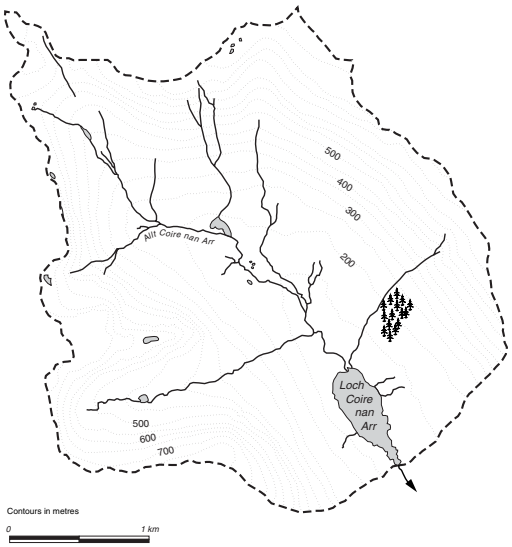
Appendix 1

APPENDIX 2

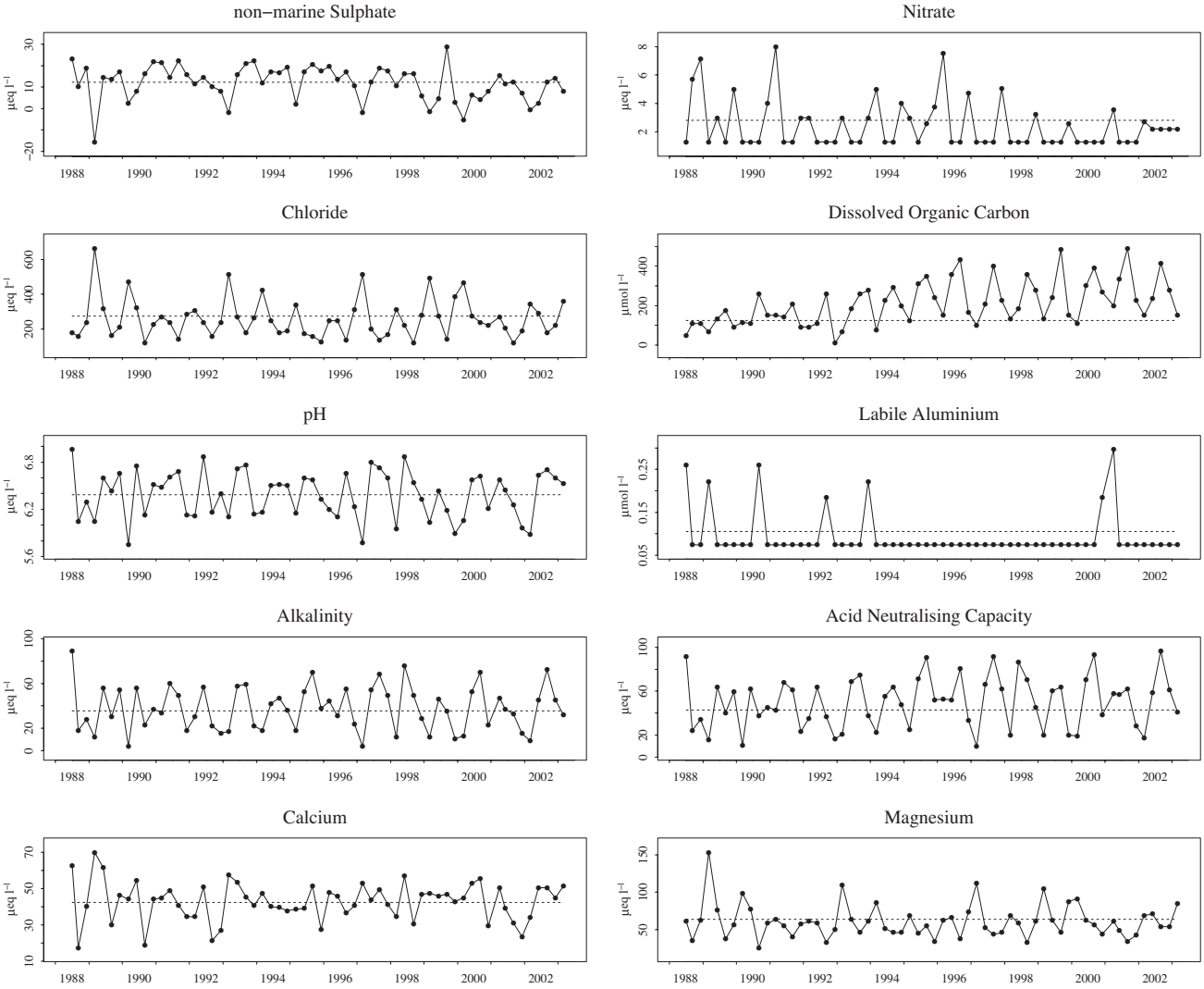
AWMN data

Site 1: Loch Coire nan Arr

Grid reference:
NG 808422



1.1a Time series for key chemical determinands



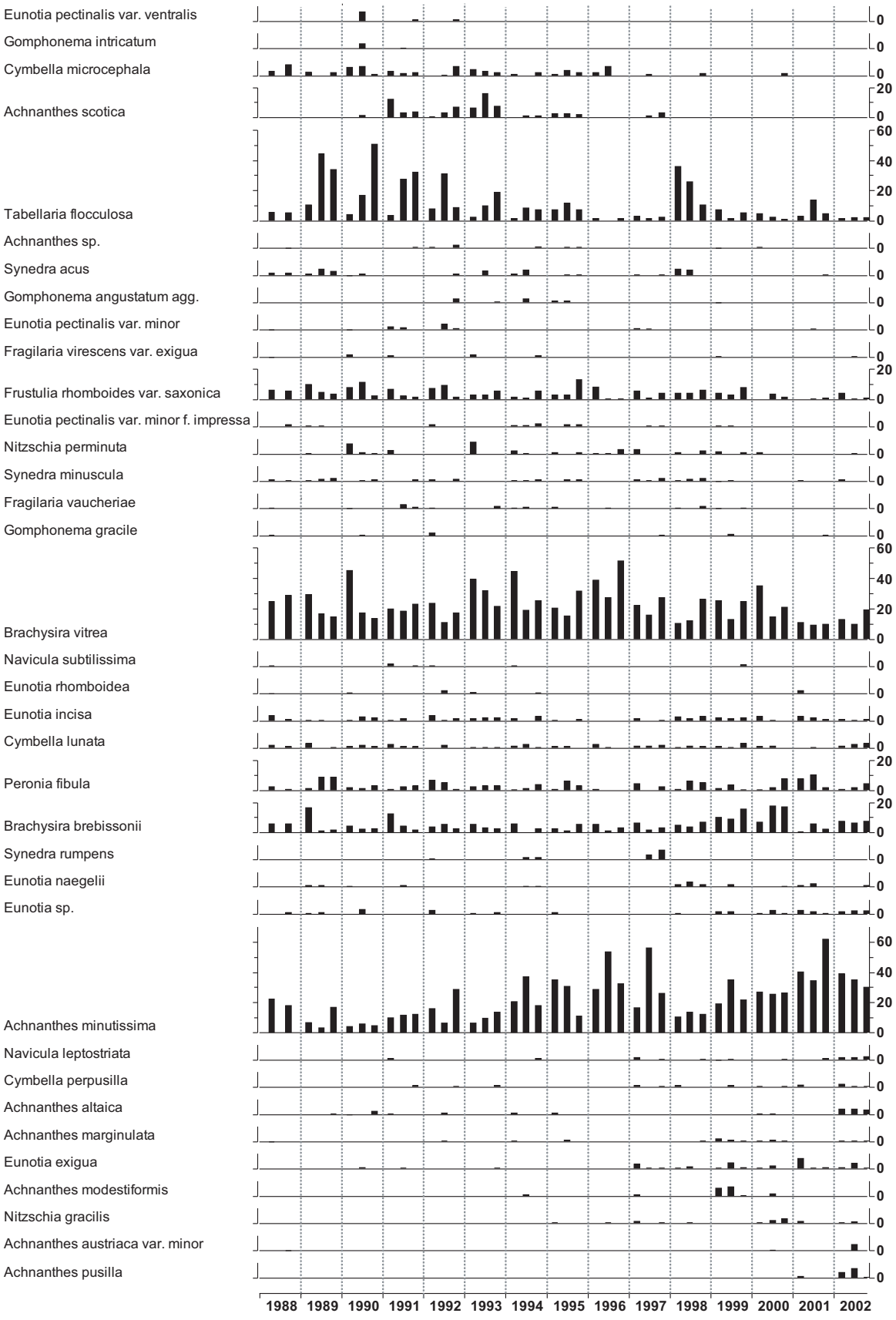
1.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
Period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS cm^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Jul 1988	mean	12.6	2.8	274.3	6.39	35.5	42.7	40.8	42.4	62.8	239.7	9.5	12.6	2.9	1.5
- Mar 1993	st. dev	9.2	2.1	136.4	0.32	21.3	21.5	16.0	14.8	29.1	89.6	3.5	8.6	1.8	0.8
	min	-15.1	1.3	124.1	5.75	4.0	10.8	21.0	17.5	25.5	130.5	2.6	2.0	2.0	0.1
	max	23.2	8.0	665.8	6.96	89.0	91.2	85.0	69.9	151.4	495.9	15.1	40.0	7.0	3.1
Apr 1993	mean	15.2	2.6	242.2	6.40	40.1	54.0	37.8	42.6	57.5	224.7	7.7	18.1	2.2	2.8
- Mar 1998	st. dev	6.1	1.8	100.6	0.30	19.0	23.4	10.6	6.6	18.0	63.4	2.5	7.5	0.9	1.2
	min	-1.3	1.3	129.8	5.77	4.0	9.8	24.0	27.4	33.7	143.6	2.6	8.0	2.0	0.9
	max	22.4	7.5	513.4	6.79	70.0	91.8	70.0	53.4	110.2	387.2	14.1	36.0	6.0	5.2
Apr 1998	mean	8.7	1.9	265.7	6.37	37.6	53.4	40.3	43.7	60.7	230.3	8.1	15.7	2.5	3.2
- Mar 2003	st. dev	7.7	1.1	103.8	0.29	20.5	24.4	11.5	9.5	18.9	66.9	2.3	9.2	1.5	1.4
	min	-5.0	1.3	118.5	5.88	9.0	17.8	23.0	23.5	32.1	134.9	3.8	2.0	2.0	1.3
	max	29.1	4.5	490.9	6.87	76.0	96.8	62.0	56.9	103.6	378.5	13.3	38.0	8.0	5.9

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

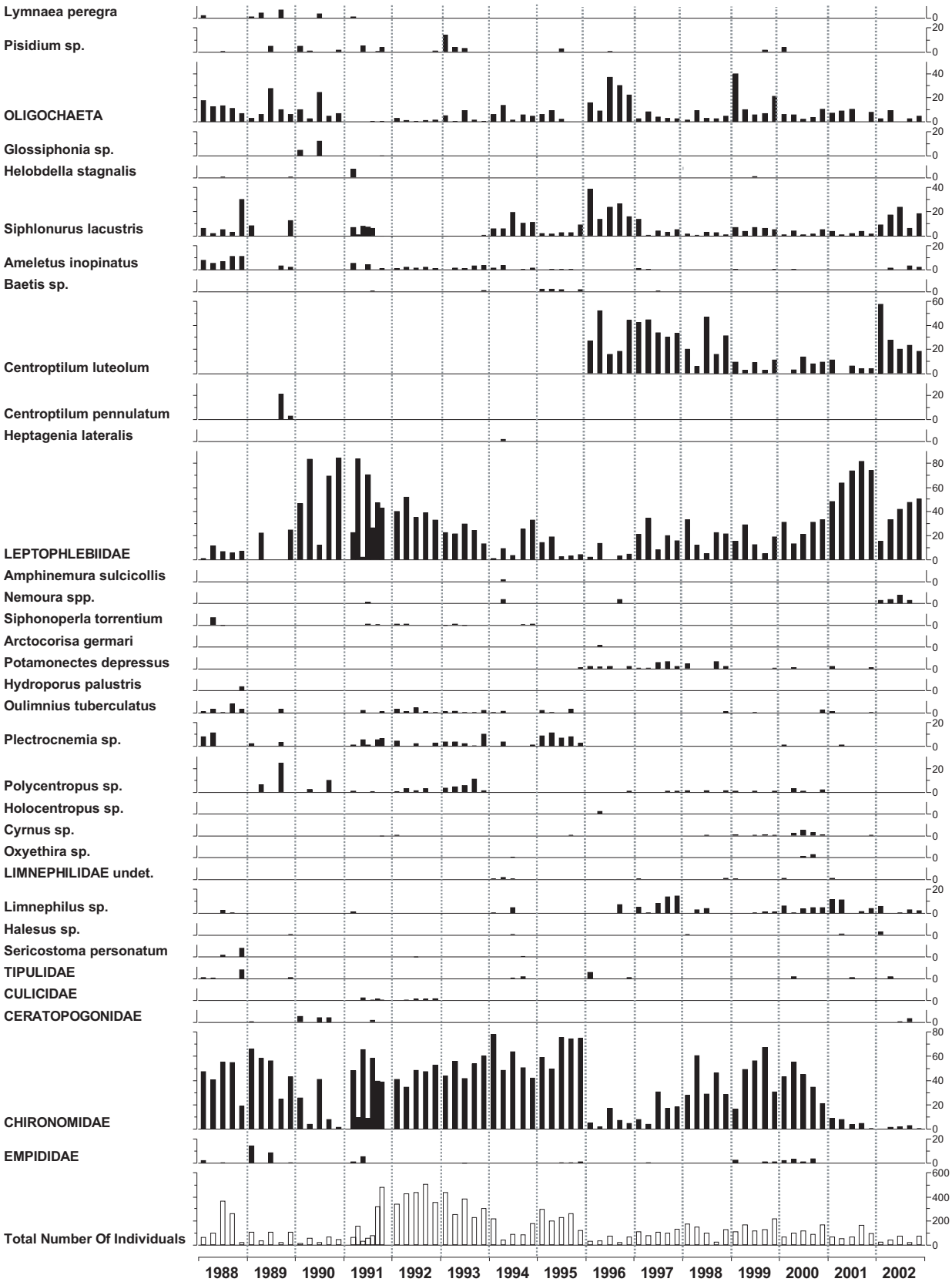
1.2 Loch Coire nan Arr - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



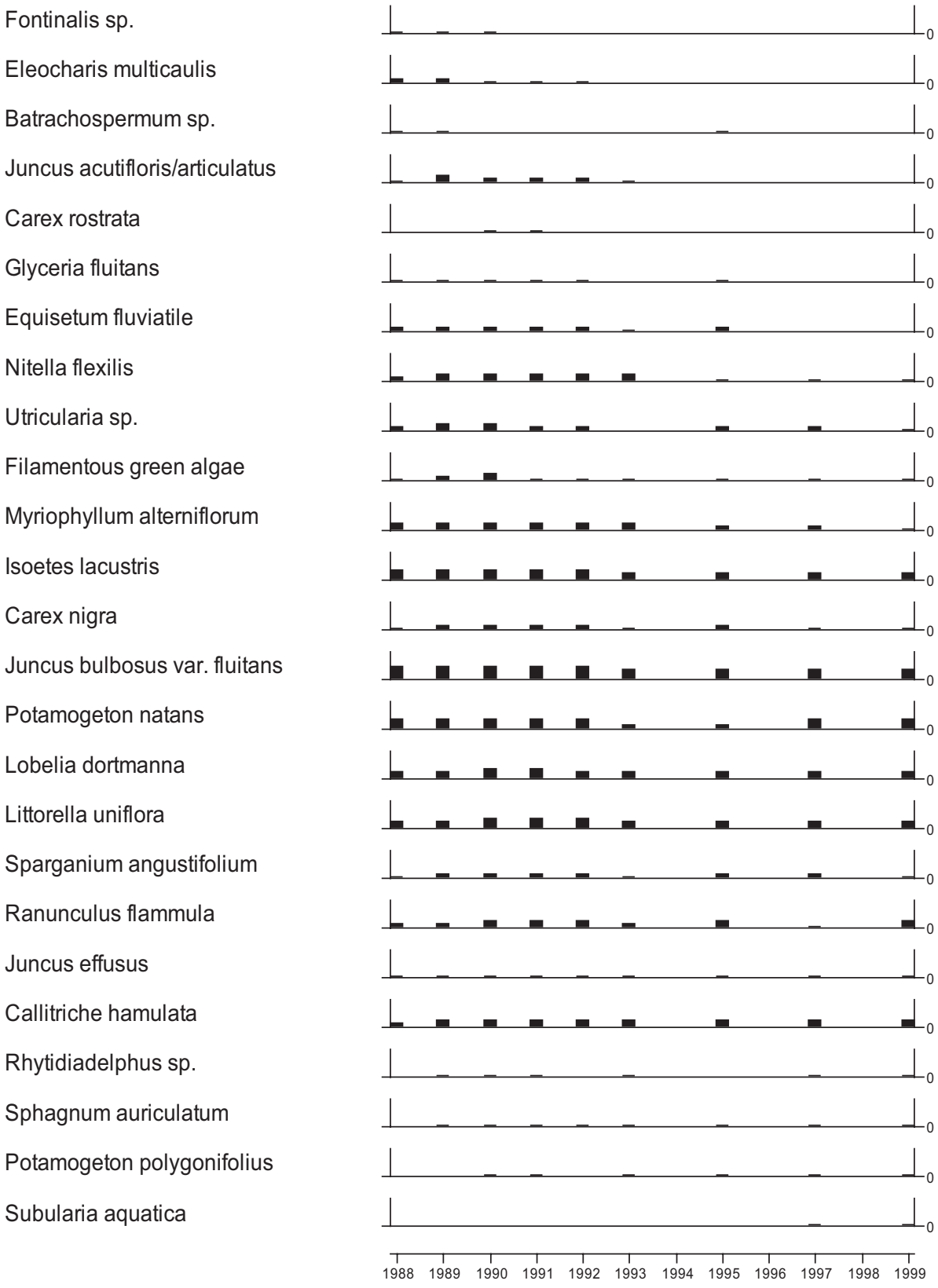
1.3 Loch Coire nan Arr - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



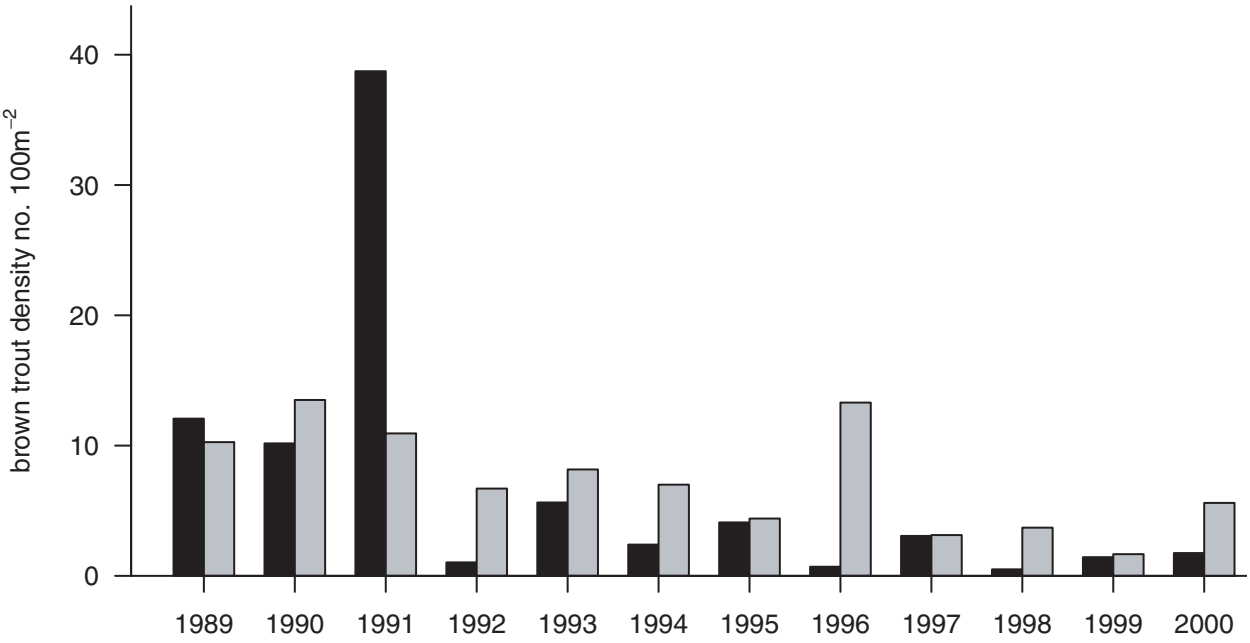
1.4 Loch Coire nan Arr - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant
no data post 1999



1.5a Loch Coire nan Arr - salmonid data

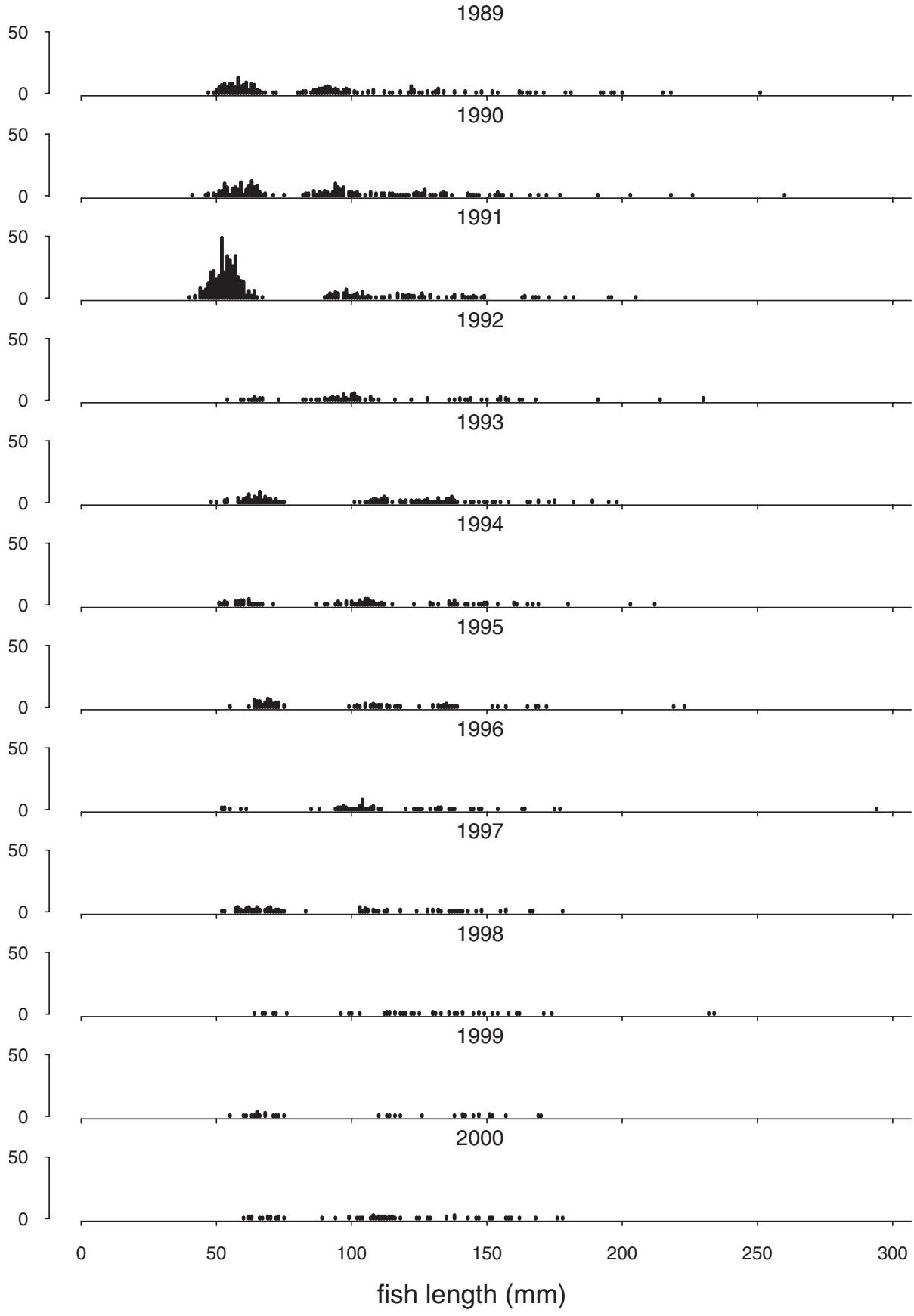
Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



1.5b Loch Coire nan Arr - salmonid data

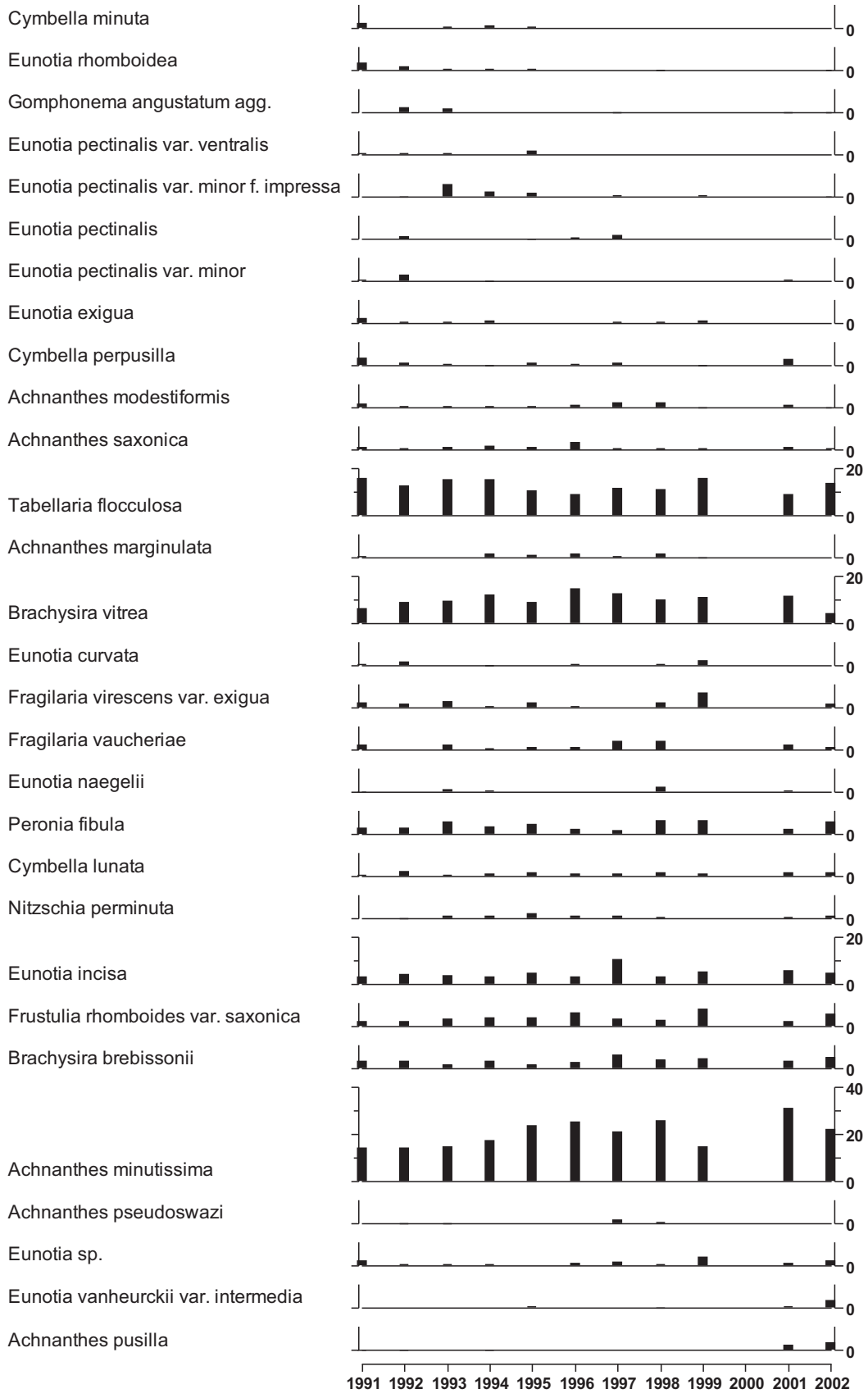
Brown trout (*Salmo trutta*) length frequency summaries

no data post 2000



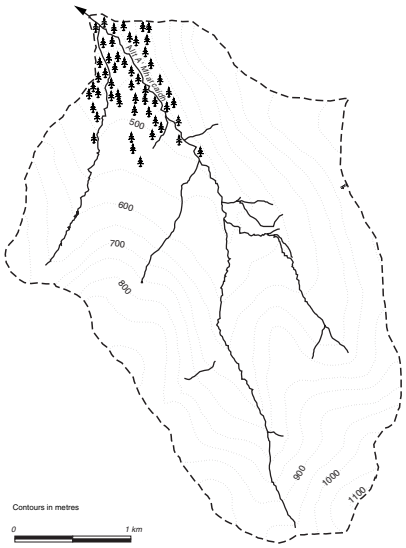
1.6 Loch Coire nan Arr - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

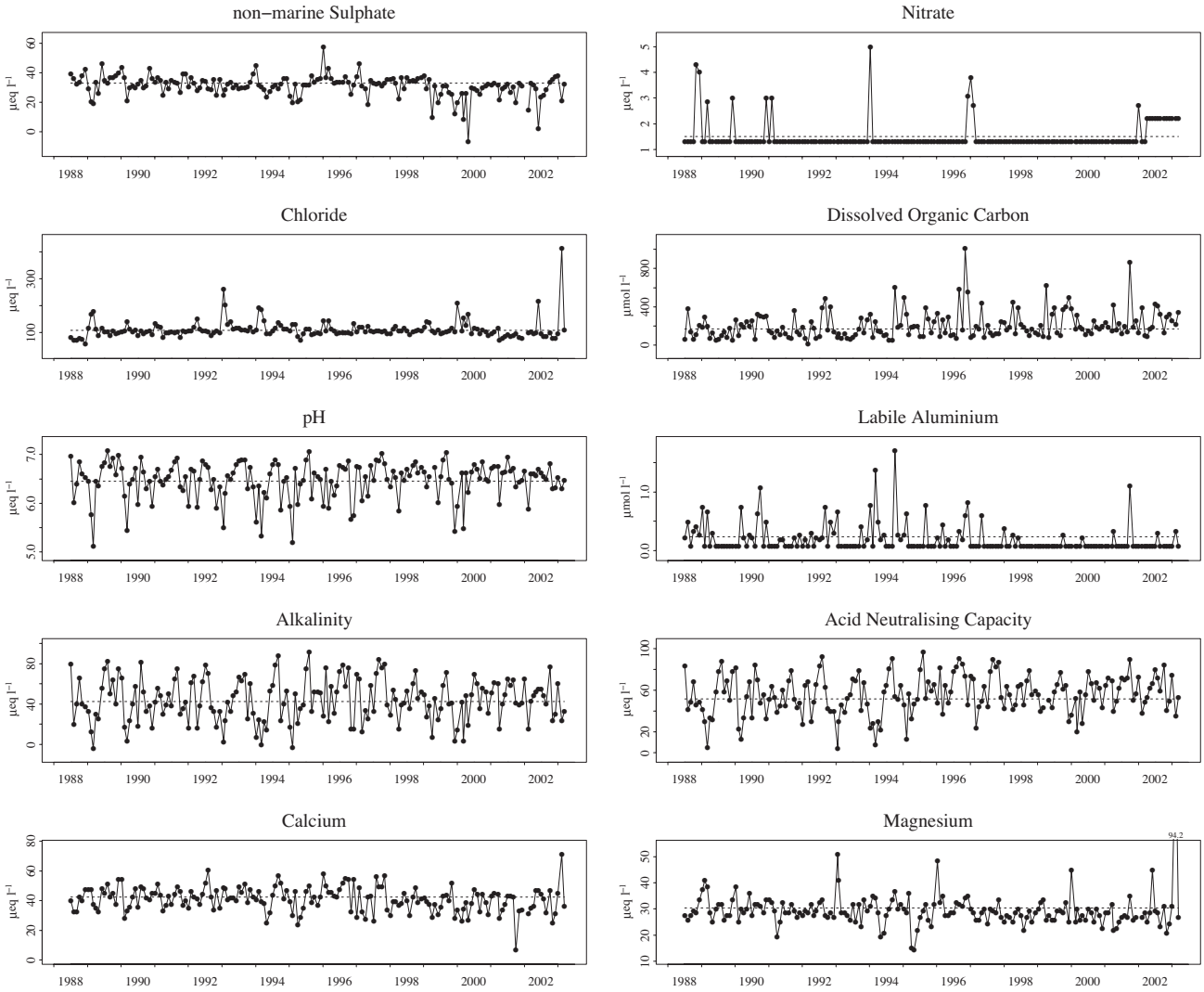


Site 2: Allt a'Mharcaidh

Grid reference:
NH 881045



2.1a Time series for key chemical determinands



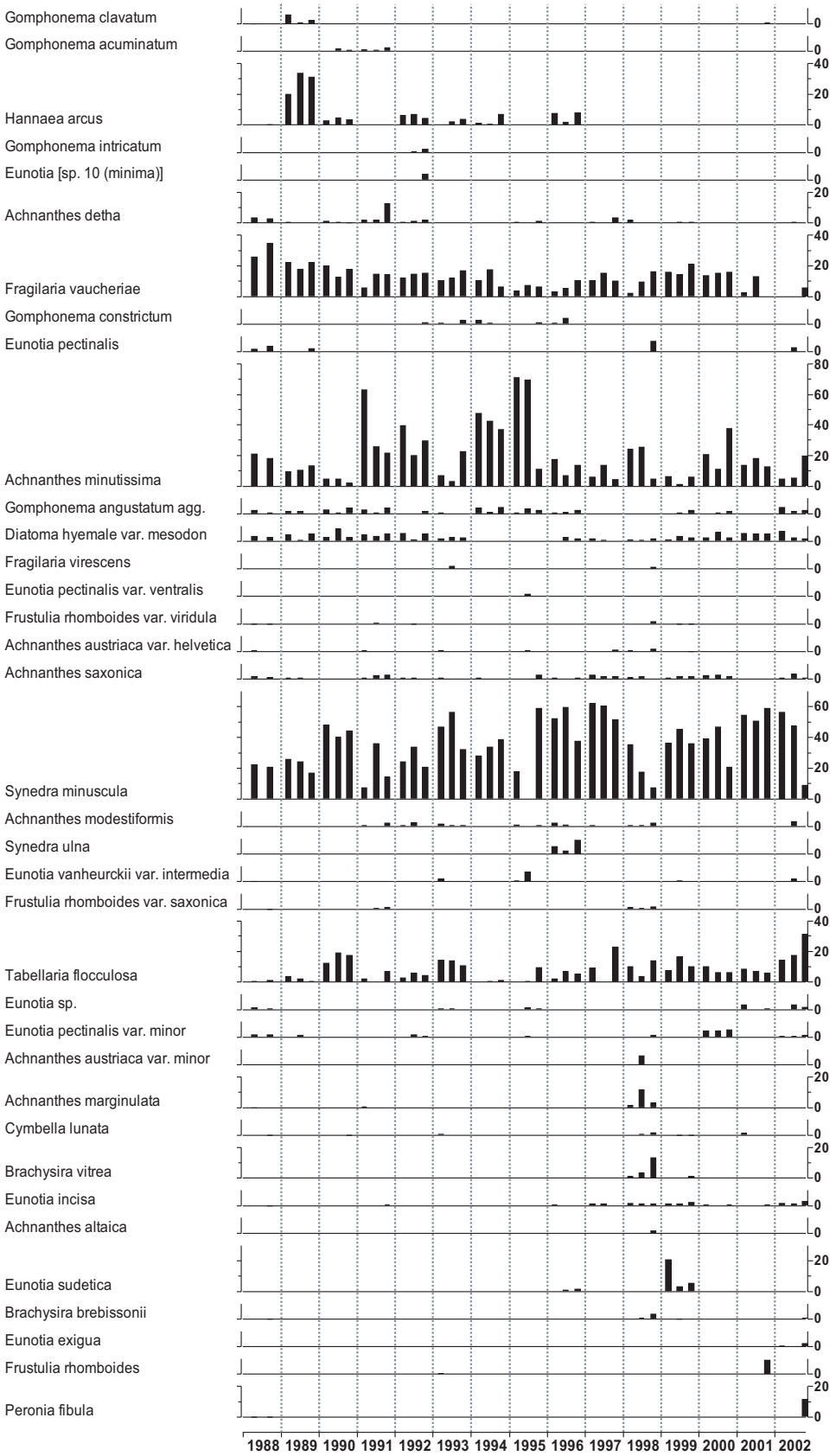
2.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	ph	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Jul 1988	mean	33.1	1.5	108.6	6.45	42.3	51.6	23.5	42.3	30.0	132.7	6.7	35.4	6.3	2.0
- Mar 1993	st. dev	5.6	0.7	32.0	0.40	21.9	20.4	3.6	6.7	4.8	18.3	2.3	27.8	6.2	1.3
	min	19.0	1.3	56.4	5.12	-4.0	4.1	17.0	27.9	18.9	91.4	2.6	2.0	2.0	0.1
	max	46.3	4.3	259.5	7.08	82.0	92.3	38.0	60.4	50.2	213.2	14.6	114.0	29.0	5.8
Apr 1993	mean	32.8	1.4	112.0	6.45	46.2	57.9	24.4	42.4	28.6	137.4	6.0	35.8	6.3	2.5
- Mar 1998	st. dev	6.2	0.6	20.5	0.42	23.8	20.6	3.4	8.7	5.1	16.5	2.1	36.9	8.6	2.0
	min	18.3	1.3	73.3	5.19	-3.0	7.9	14.0	23.5	14.0	91.4	2.6	2.0	2.0	0.6
	max	57.9	5.0	191.8	7.06	91.0	96.3	32.0	57.9	47.7	174.0	13.6	166.0	46.0	12.1
Apr 1998	mean	27.8	1.3	111.2	6.51	43.0	57.3	22.0	38.1	28.7	131.0	5.6	30.3	3.1	2.9
- Mar 2003	st. dev	8.8	0.3	48.0	0.32	17.6	14.9	2.7	8.7	9.5	31.9	0.9	24.5	4.0	1.7
	min	-6.9	1.3	70.5	5.43	3.0	19.4	12.0	6.5	20.6	82.7	3.8	2.0	2.0	0.9
	max	38.2	2.9	411.9	7.05	77.0	89.7	28.0	70.9	93.0	308.9	8.4	109.0	30.0	10.4

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

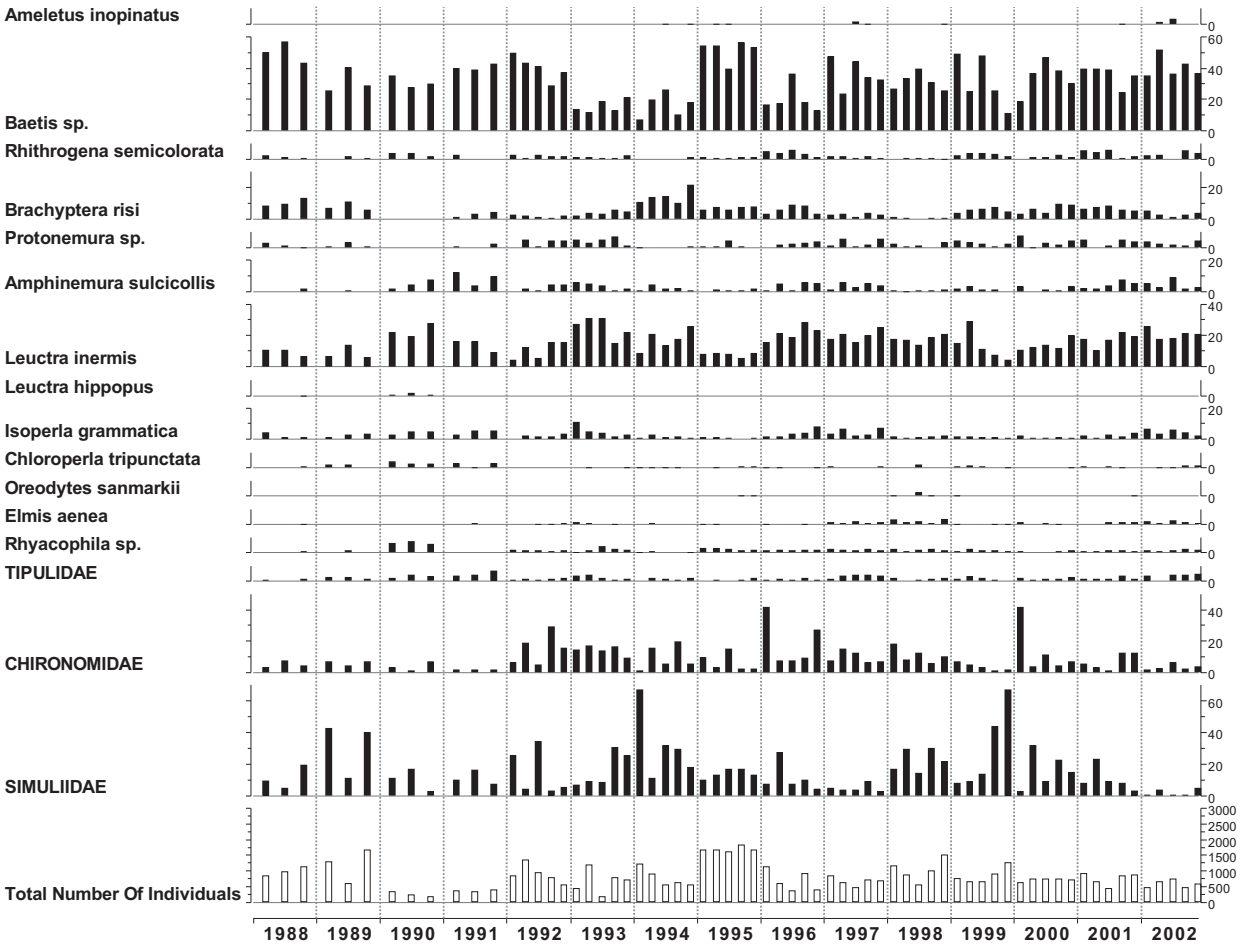
2.2 Allt a'Mharcaidh - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



2.3 Allt a'Mharcaidh - macroinvertebrate data

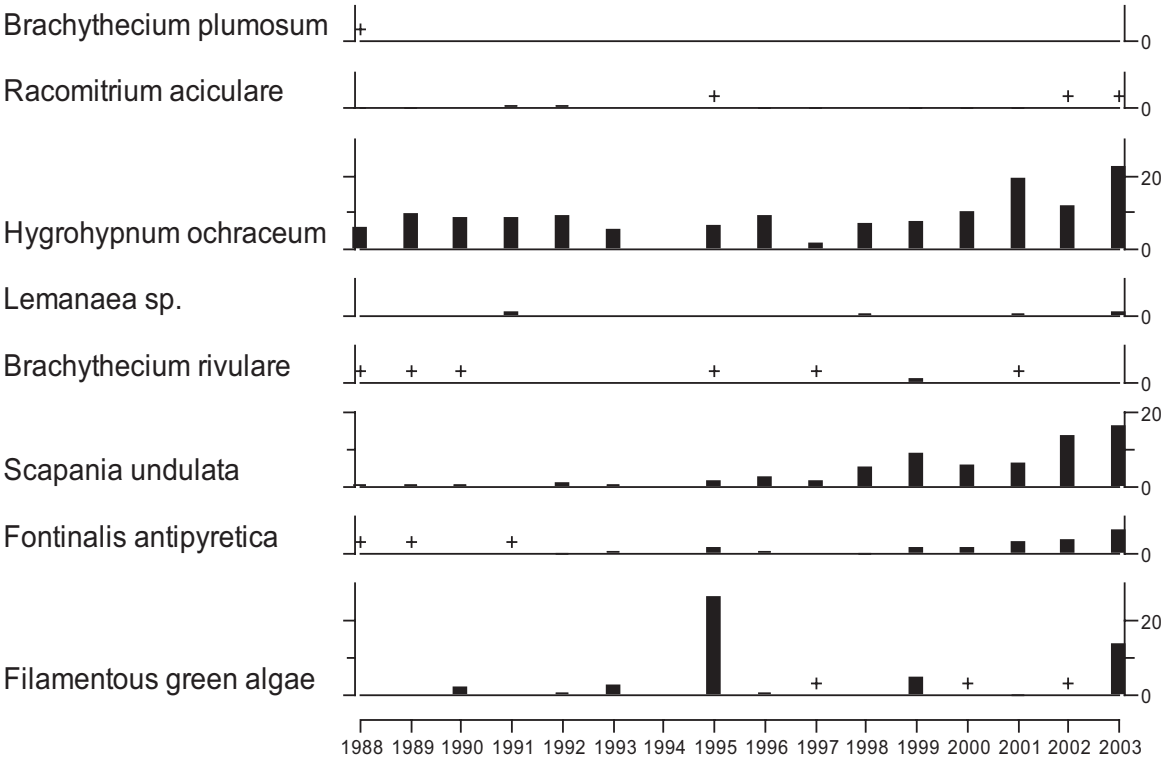
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



2.4 Allt a'Mharcaidh - aquatic macrophyte data

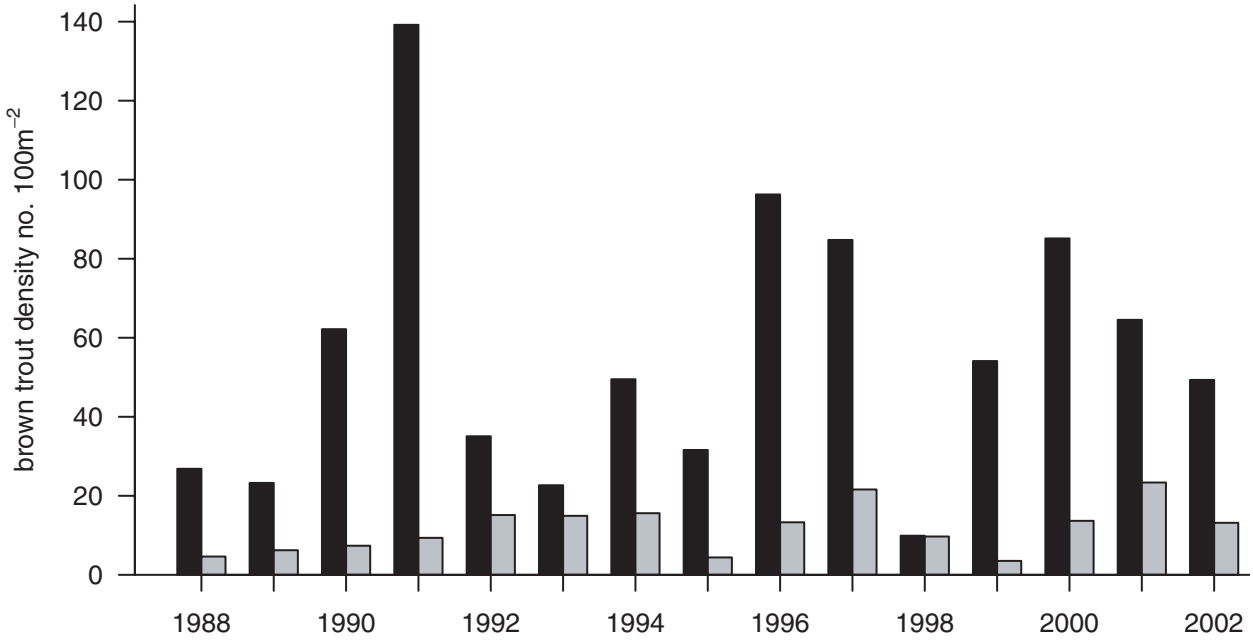
percentage cover estimates for 50m survey stretch

no data for 1994

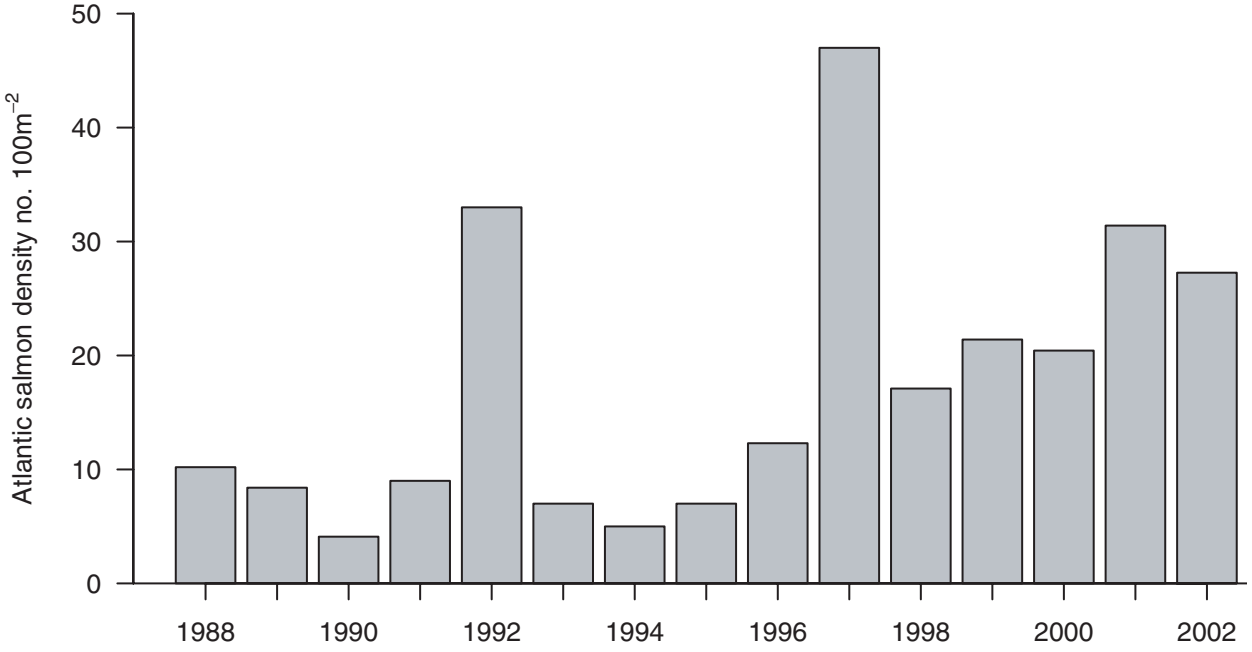


2.5a Allt a'Mharcaidh - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).

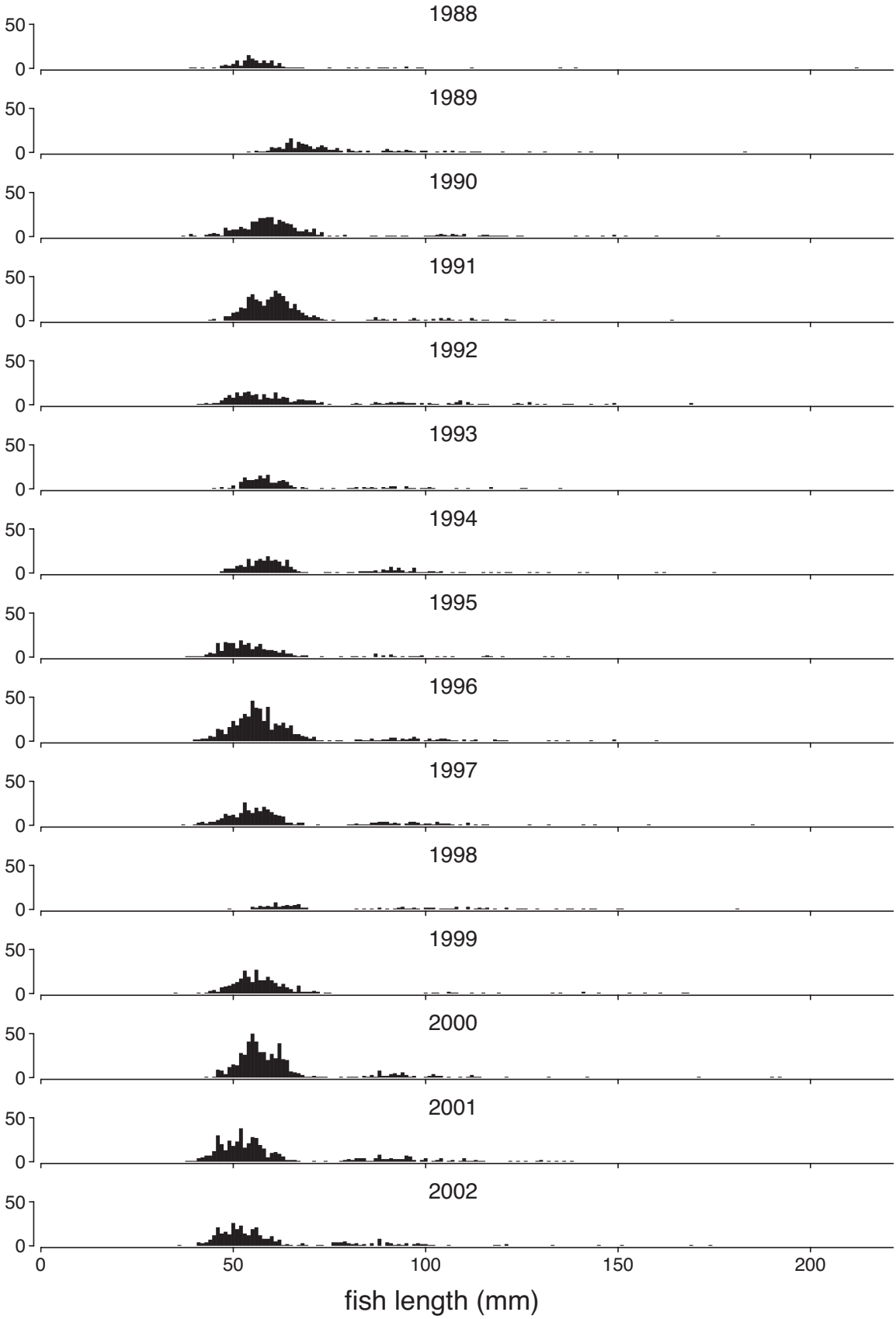


Atlantic salmon (*Salmo salar*) density (all age groups)



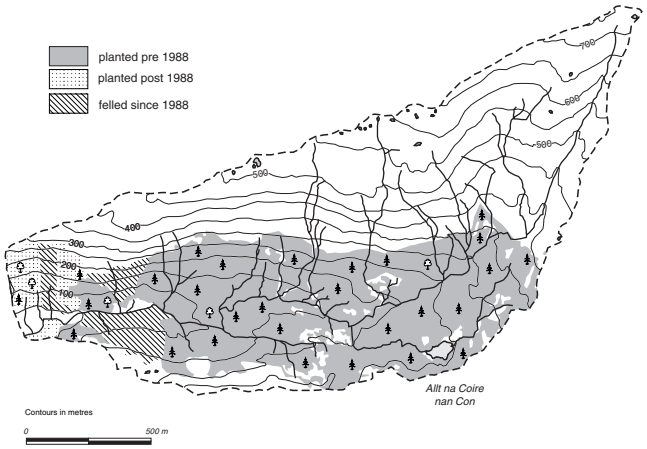
2.5b Allt a'Mharcaidh - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

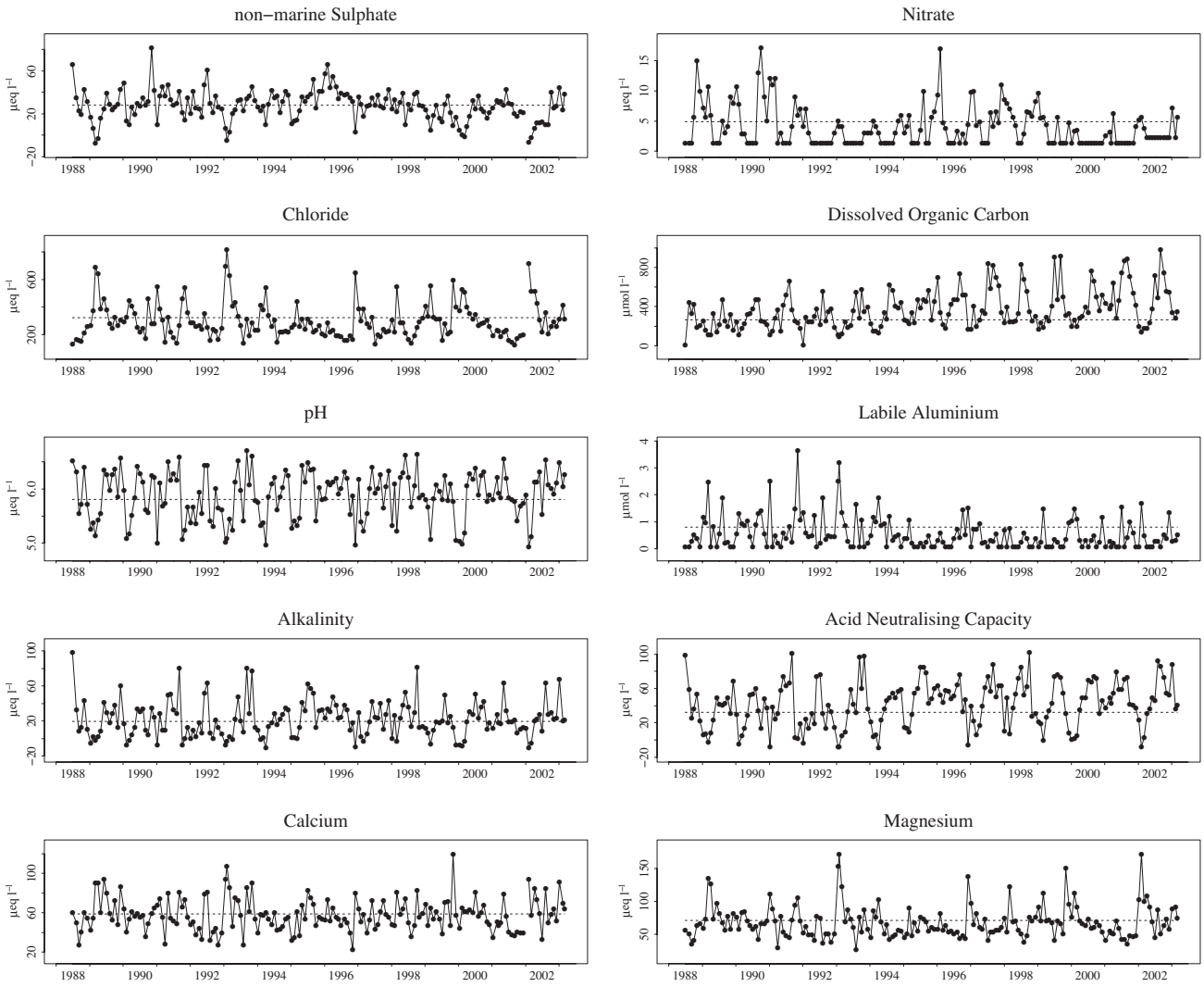


Site 3: Allt na Coire nan Con

Grid reference:
NM 793688



3.1a Time series for key chemical determinands



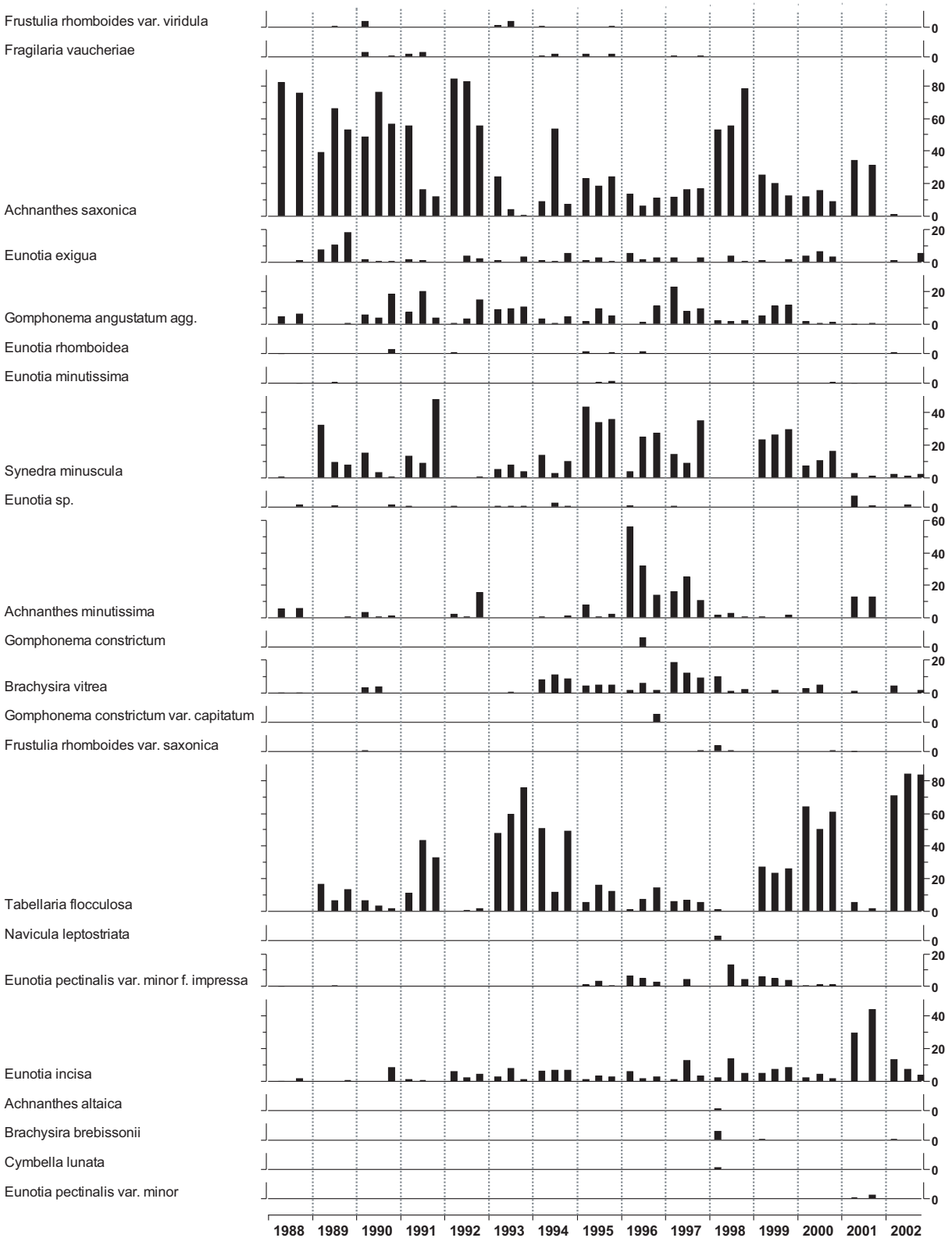
3.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS cm^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Jun 1988	mean	28.4	4.9	321.9	5.81	20.5	32.5	48.7	58.9	70.0	272.1	9.1	64.9	21.7	3.2
- Mar 1993	st. dev	16.3	4.1	153.0	0.47	22.7	26.4	17.4	18.6	28.1	91.3	3.4	29.4	22.0	1.6
	min	-7.0	1.3	126.9	5.00	-7.0	-8.7	20.0	27.4	29.6	152.3	2.6	12.0	2.0	0.1
	max	81.6	17.1	818.1	6.59	98.0	101.3	108.0	107.3	168.6	569.9	15.6	129.0	98.0	7.9
Apr 1993	mean	32.4	3.9	272.7	5.89	24.4	44.6	44.0	55.8	62.9	253.0	8.5	66.4	12.8	4.6
- Mar 1998	st. dev	11.4	3.2	103.3	0.43	19.6	25.3	11.6	14.1	19.1	63.2	3.2	26.9	12.2	2.1
	min	3.3	1.3	129.8	4.96	-11.0	-9.5	26.0	22.5	26.3	156.6	2.6	15.0	2.0	1.6
	max	66.4	17.0	648.8	6.70	80.0	97.8	77.0	90.3	136.6	443.7	18.4	131.0	51.0	10.0
Apr 1998	mean	22.0	5.3	301.6	5.92	21.9	47.1	47.0	58.9	69.6	260.2	7.6	61.1	10.5	5.3
- Mar 2003	st. dev	11.9	18.2	123.1	0.41	18.8	25.5	14.2	16.5	25.2	72.7	3.5	27.0	11.9	2.7
	min	-6.1	1.3	124.1	4.94	-11.0	-8.4	25.0	33.4	35.4	147.9	2.8	15.0	2.0	1.7
	max	44.8	142.9	719.4	6.64	81.0	101.8	93.0	119.3	169.5	504.6	27.6	128.0	45.0	11.8

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

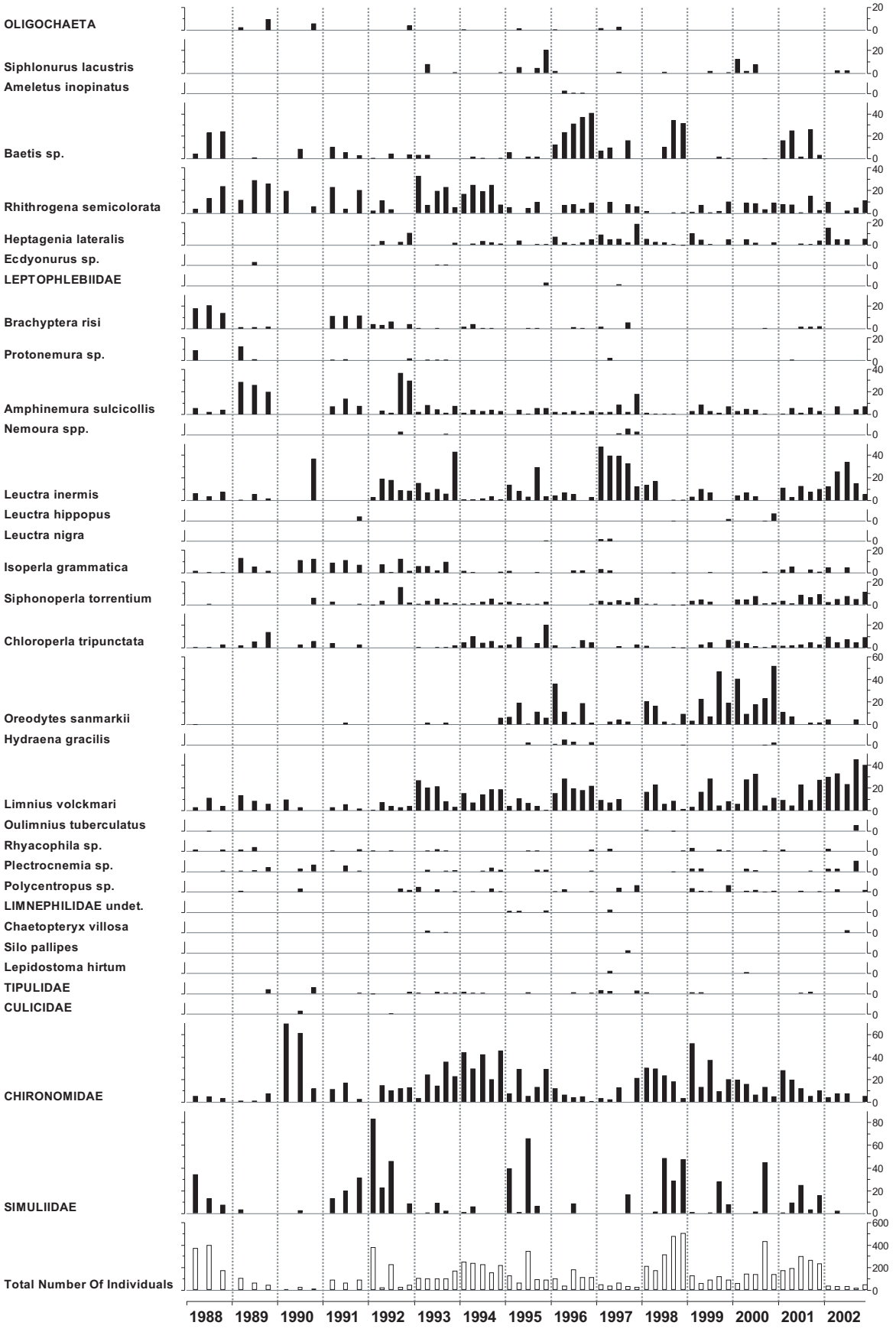
3.2 Allt na Coire nan Con - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



3.3 Allt na Coire nan Con - macroinvertebrate data

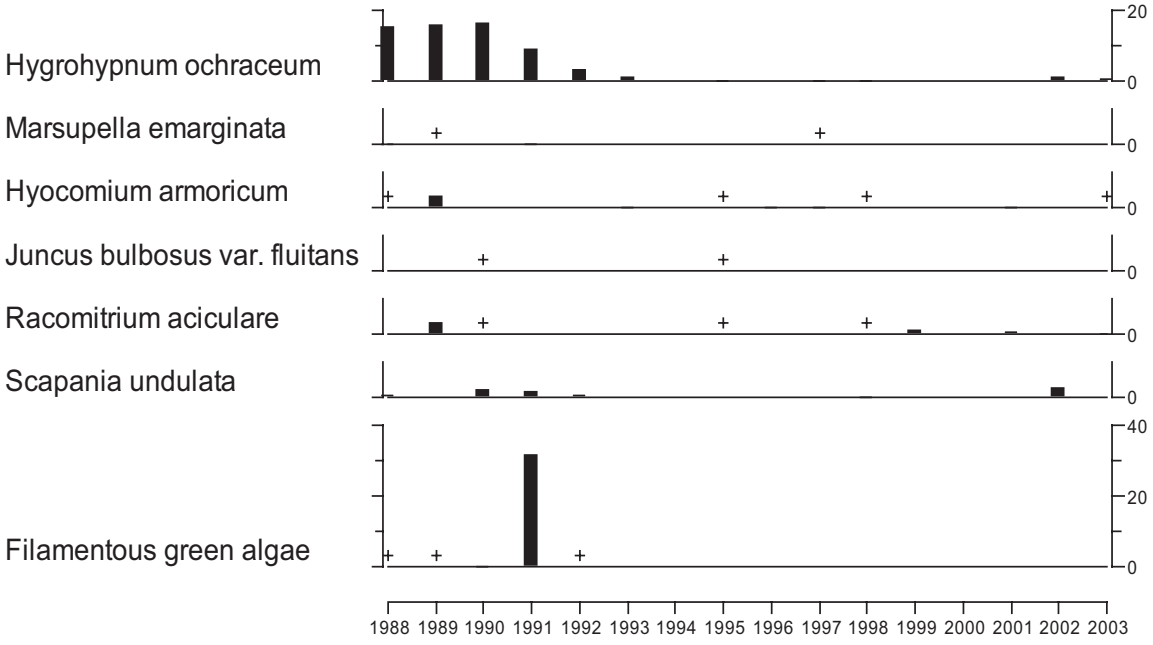
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



3.4 Allt na Coire nan Con - aquatic macrophyte data

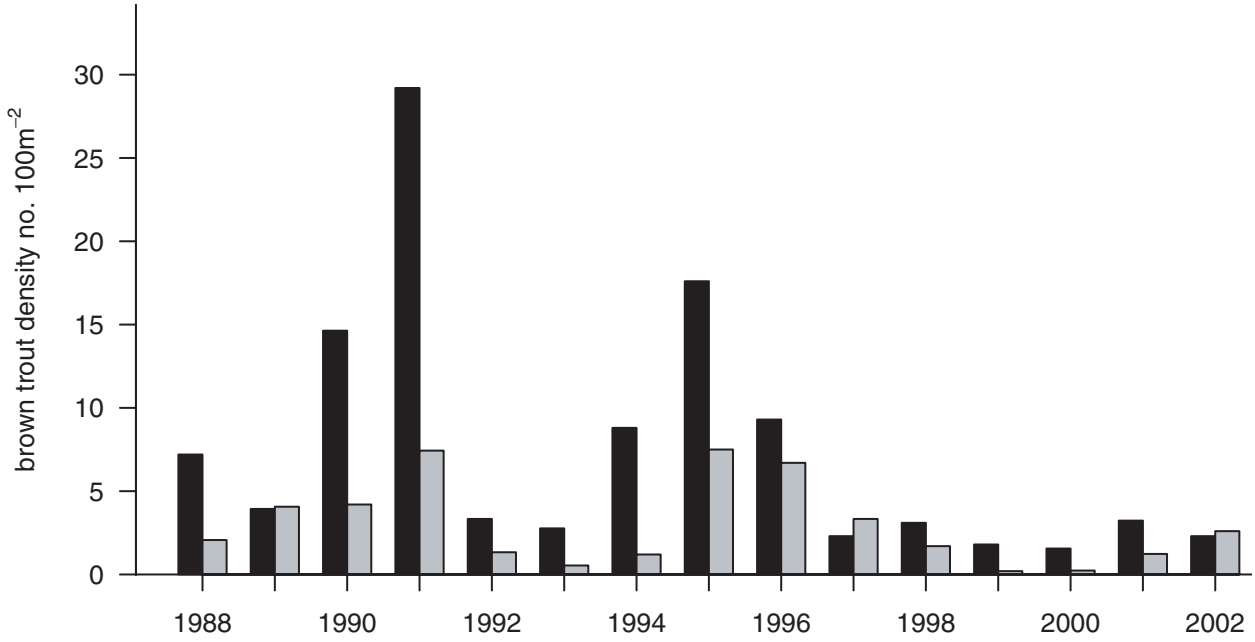
percentage cover estimates for 50m survey stretch

no data for 1994

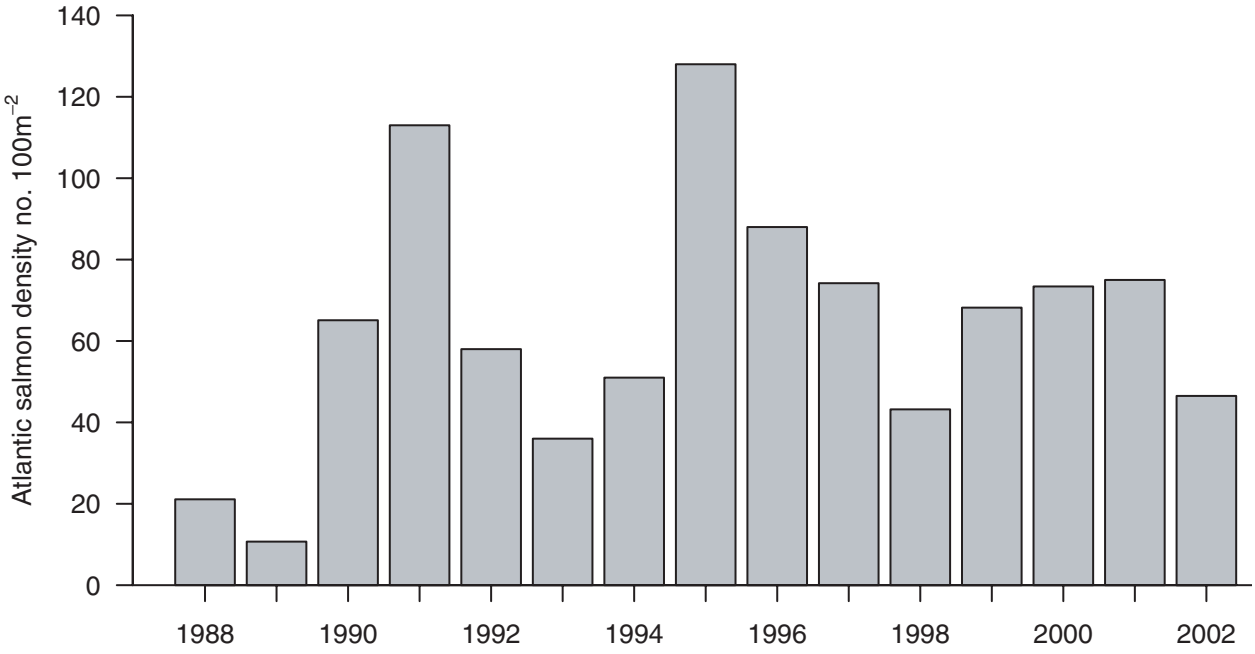


3.5a Allt na Coire nan Con - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).

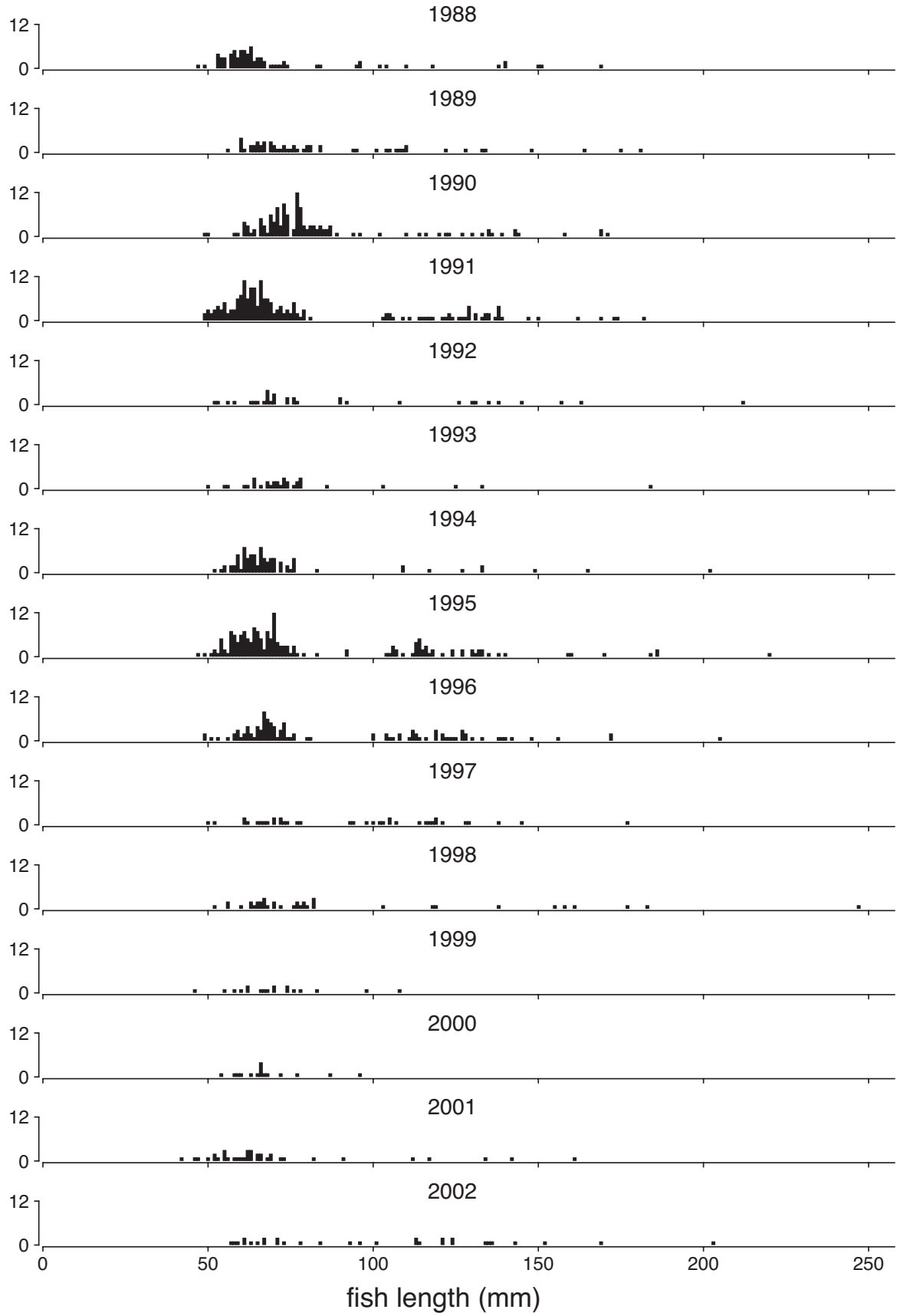


Atlantic salmon (*Salmo salar*) density (all age groups)



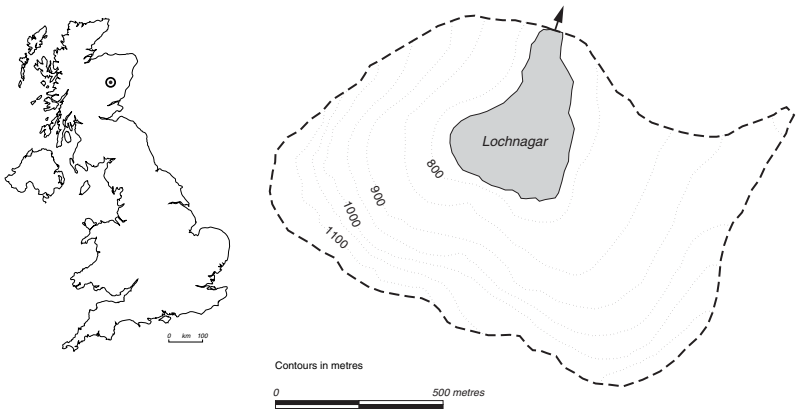
3.5b Allt na Coire nan Con - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

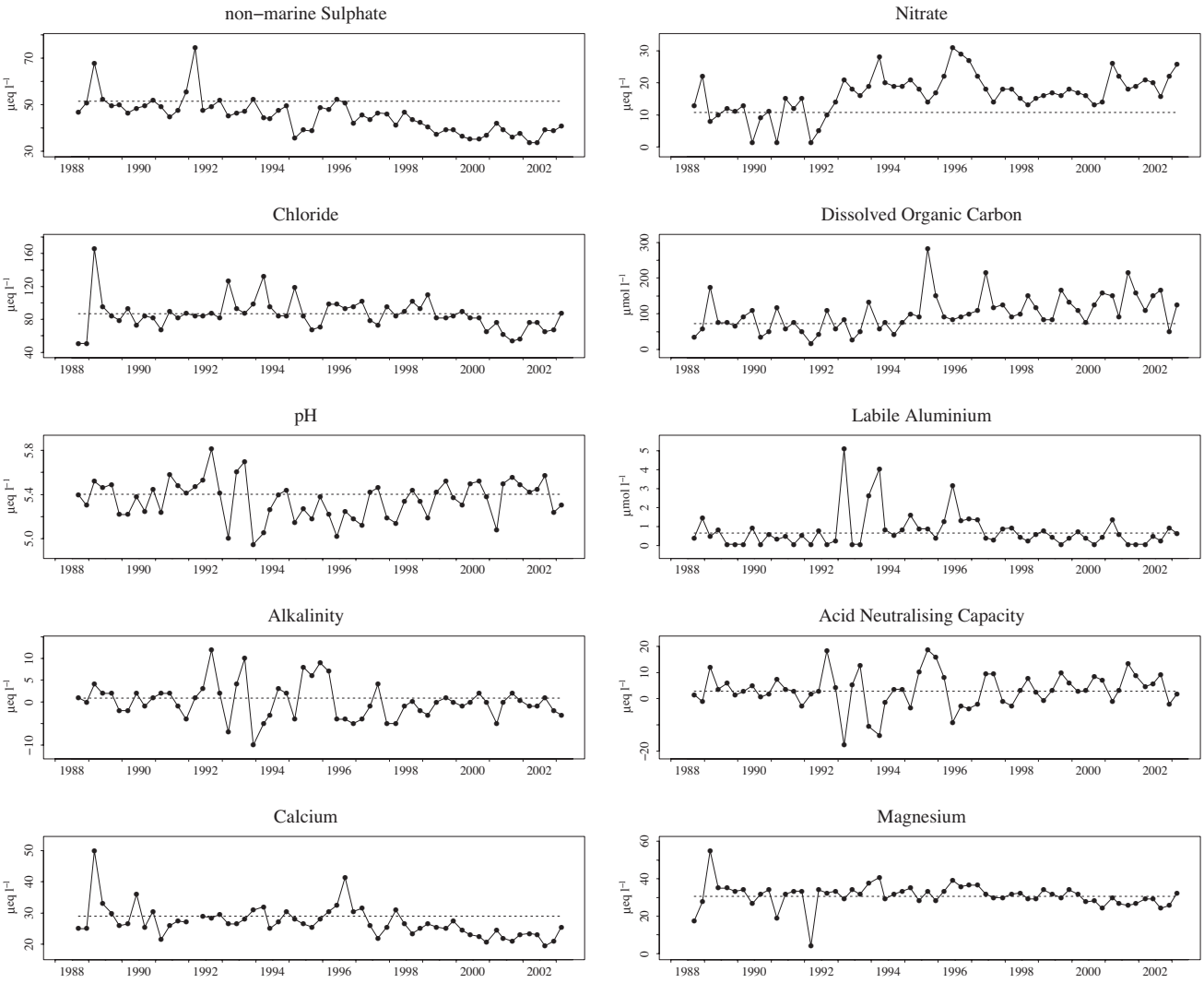


Site 4: Lochnagar

Grid reference:
NO 252859



4.1a Time series for key chemical determinands



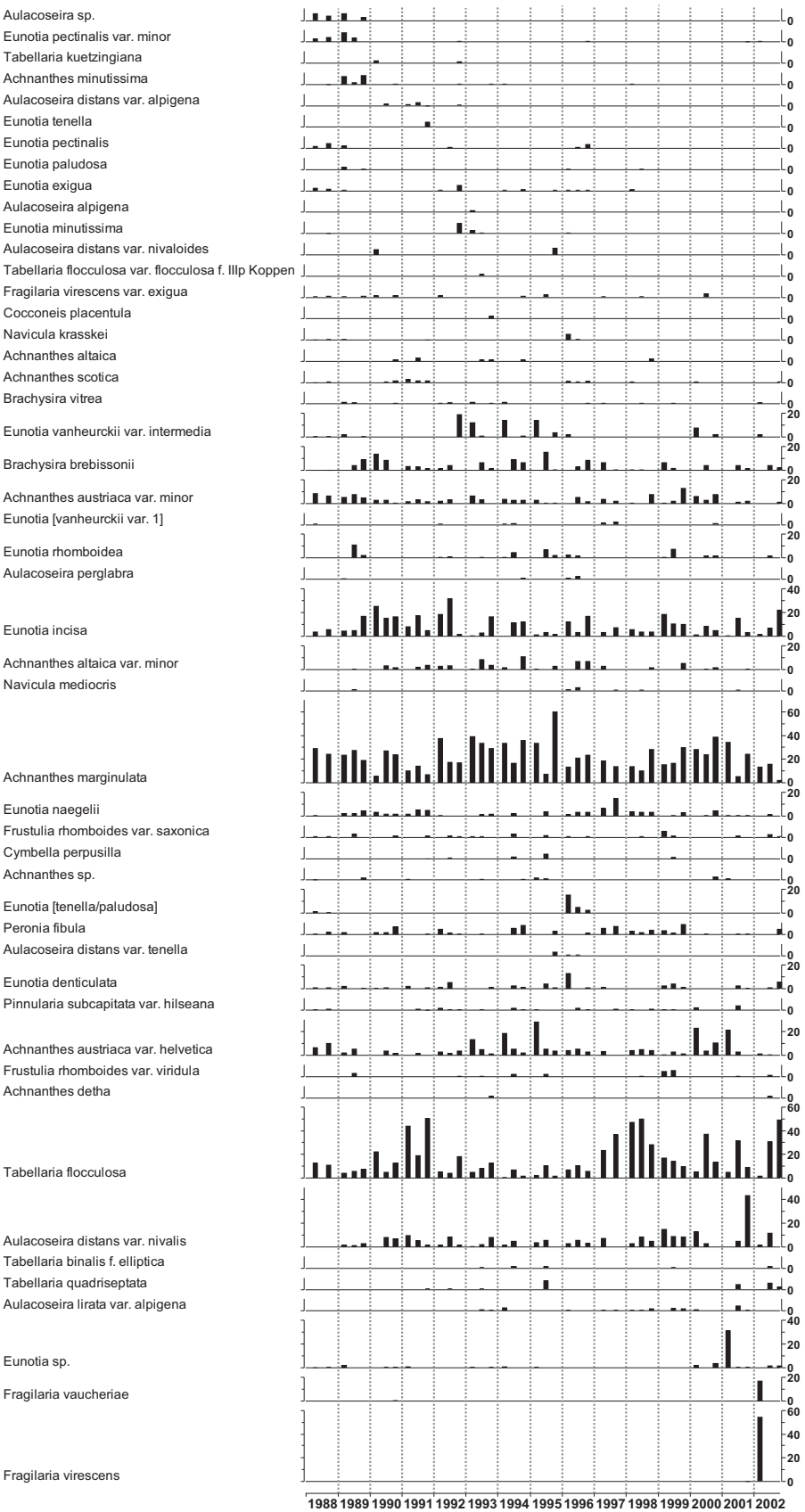
4.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Sep 1988 - Mar 1993	mean	51.5	10.8	87.0	5.40	0.9	2.8	20.5	29.0	30.2	92.3	7.5	32.0	17.9	0.9
	st. dev	7.5	5.8	25.1	0.17	3.9	6.8	6.0	6.2	9.7	21.9	3.9	30.3	30.5	0.4
	min	44.7	1.3	50.8	5.01	-7.0	-17.7	4.0	21.5	4.1	69.6	2.6	2.0	2.0	0.2
	max	74.5	22.1	166.4	5.81	12.0	18.3	35.0	49.9	54.3	174.0	19.4	147.0	137.0	2.1
Apr 1993 - Mar 1998	mean	45.5	20.4	92.0	5.27	0.2	2.3	23.1	28.9	33.0	95.5	6.4	51.0	32.2	1.3
	st. dev	4.5	4.8	15.3	0.19	5.8	8.9	2.8	4.1	3.5	11.2	2.2	30.8	27.6	0.7
	min	35.6	14.0	67.7	4.95	-10.0	-14.0	20.0	22.0	28.0	82.7	2.6	6.0	2.0	0.3
	max	52.2	31.0	132.6	5.70	10.0	18.6	29.0	41.4	40.3	126.2	12.5	125.0	109.0	3.4
Apr 1998 - Mar 2003	mean	38.7	18.0	79.1	5.40	-0.8	4.8	19.9	23.6	28.7	81.8	4.9	27.4	12.2	1.5
	st. dev	3.4	3.8	14.6	0.13	2.0	4.0	2.8	2.2	3.0	11.5	1.2	10.4	8.9	0.5
	min	33.7	13.0	53.6	5.08	-5.0	-2.1	17.0	19.5	23.9	52.2	3.8	10.0	2.0	0.6
	max	46.8	26.0	110.0	5.57	2.0	13.5	29.0	27.4	33.7	100.1	9.5	54.0	36.0	2.6

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

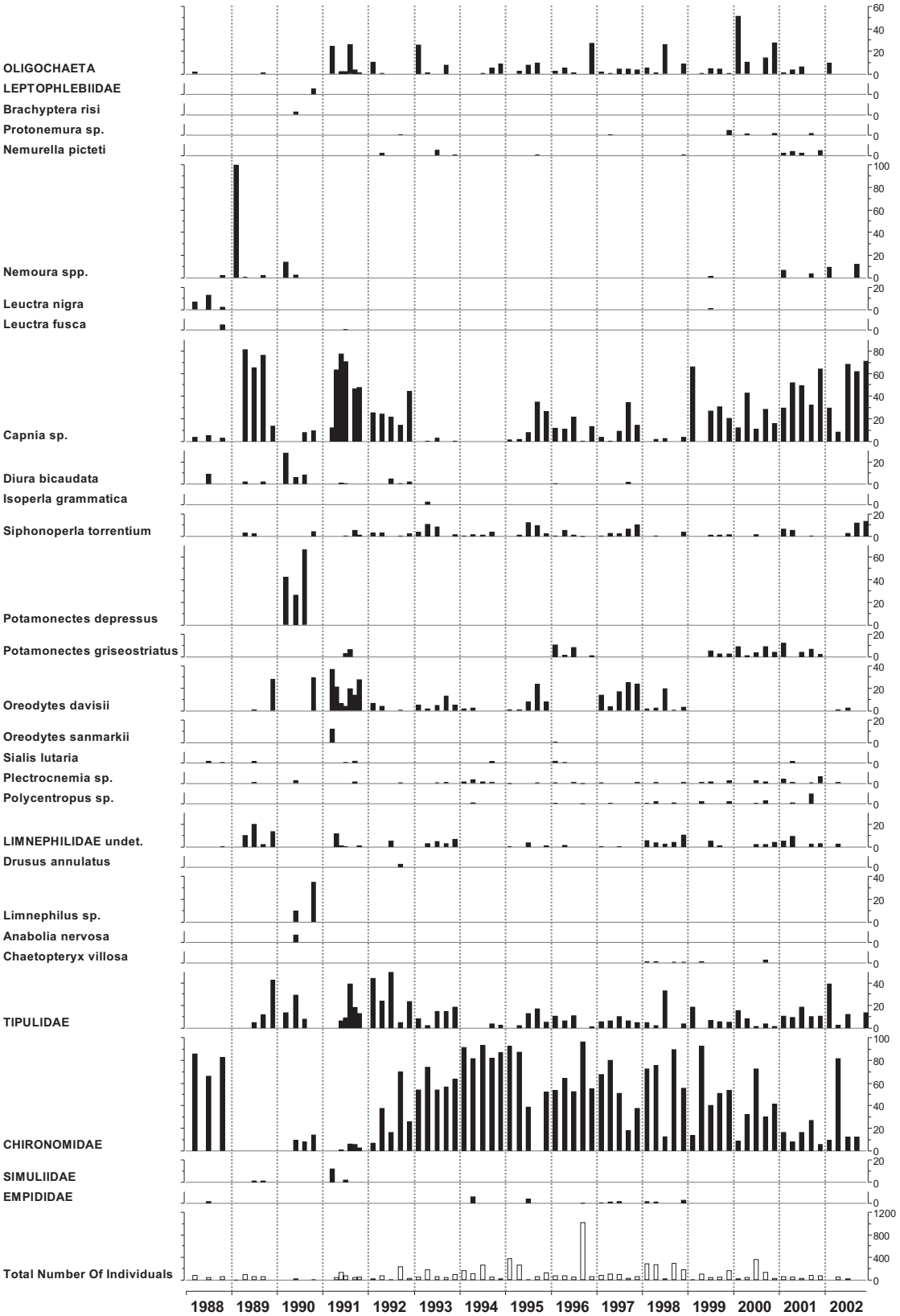
4.2 Lochnagar - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



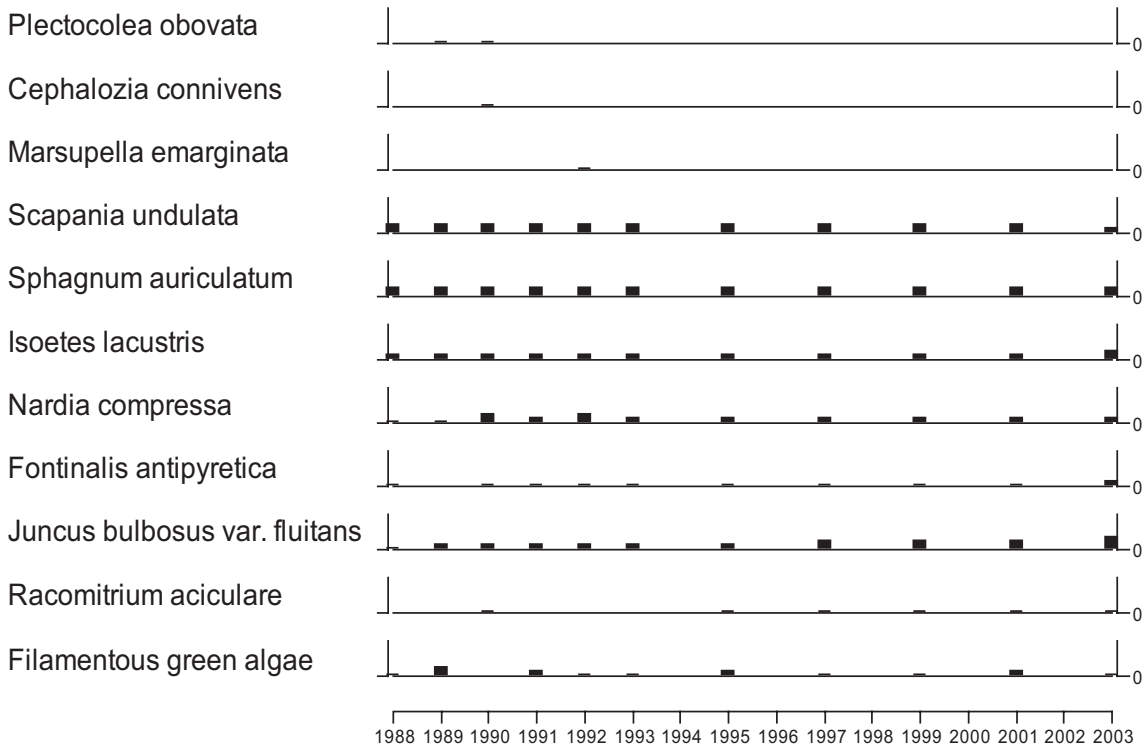
4.3 Lochnagar - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



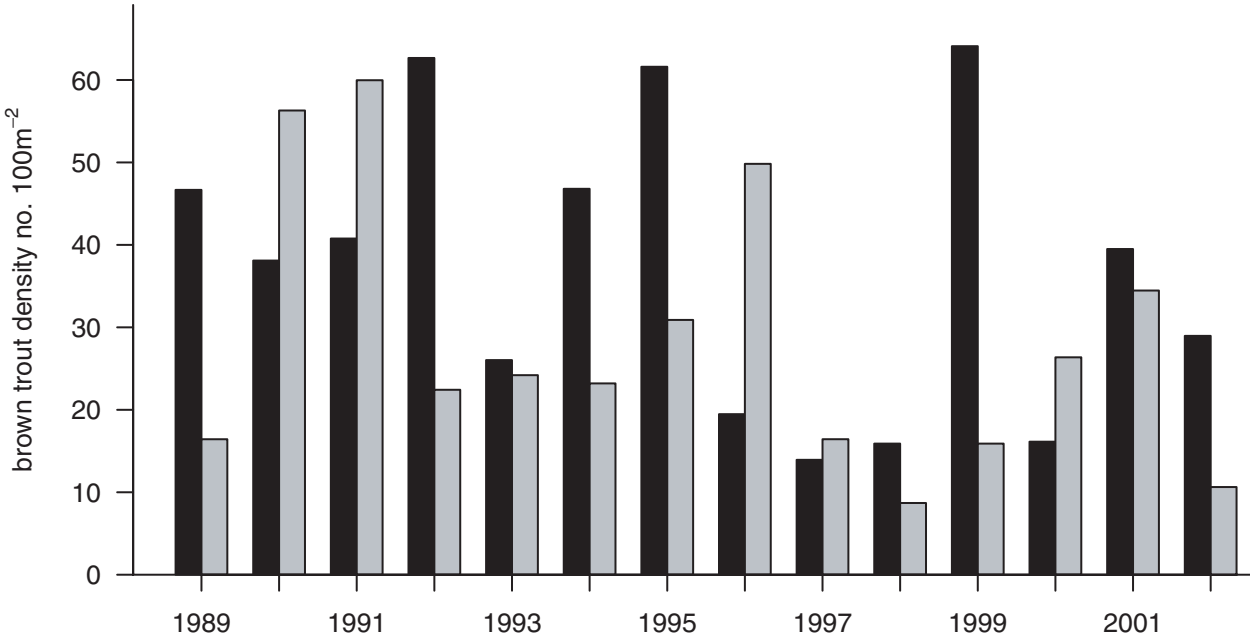
4.4 Lochnagar - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



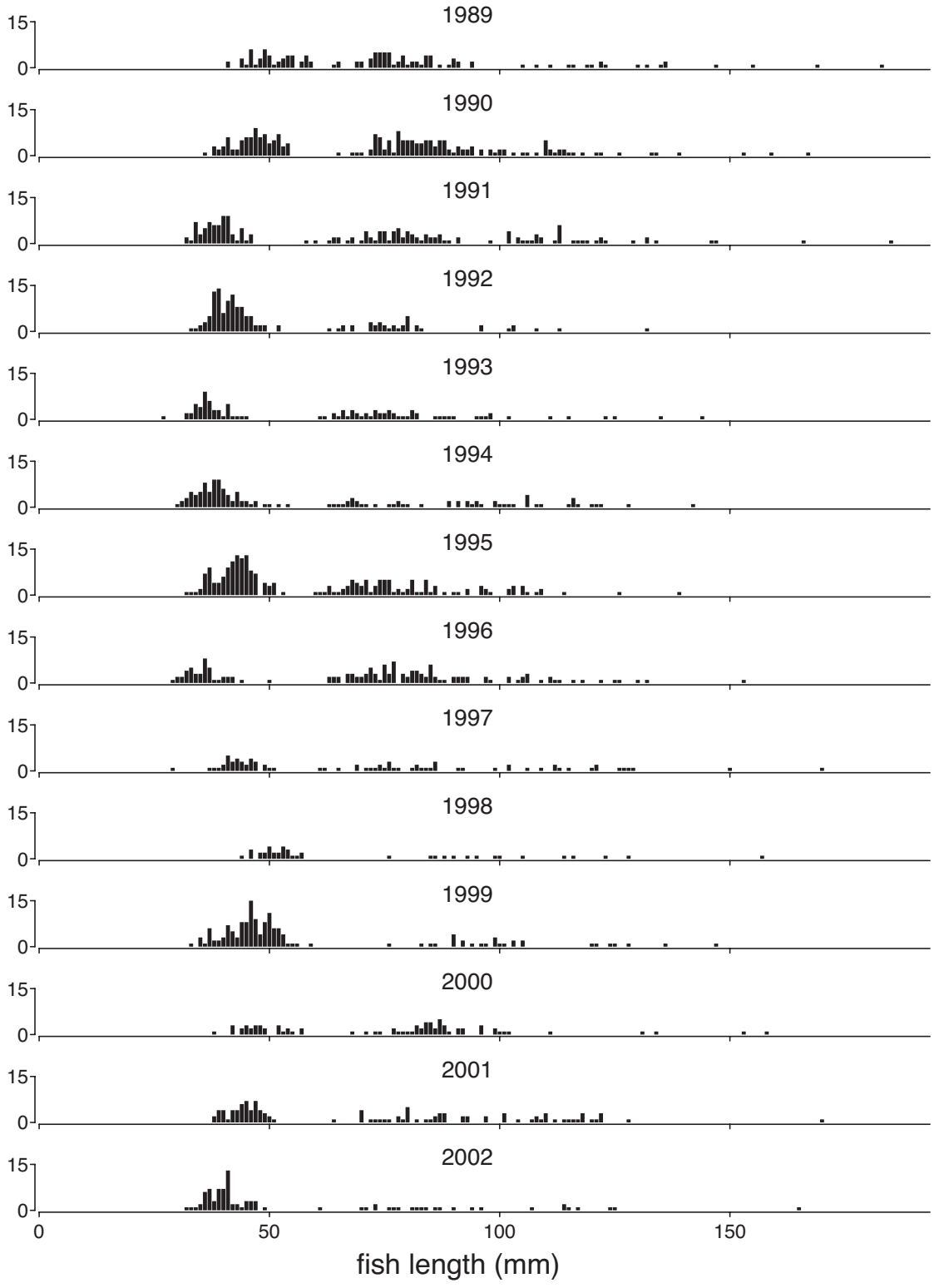
4.5a Lochnagar - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



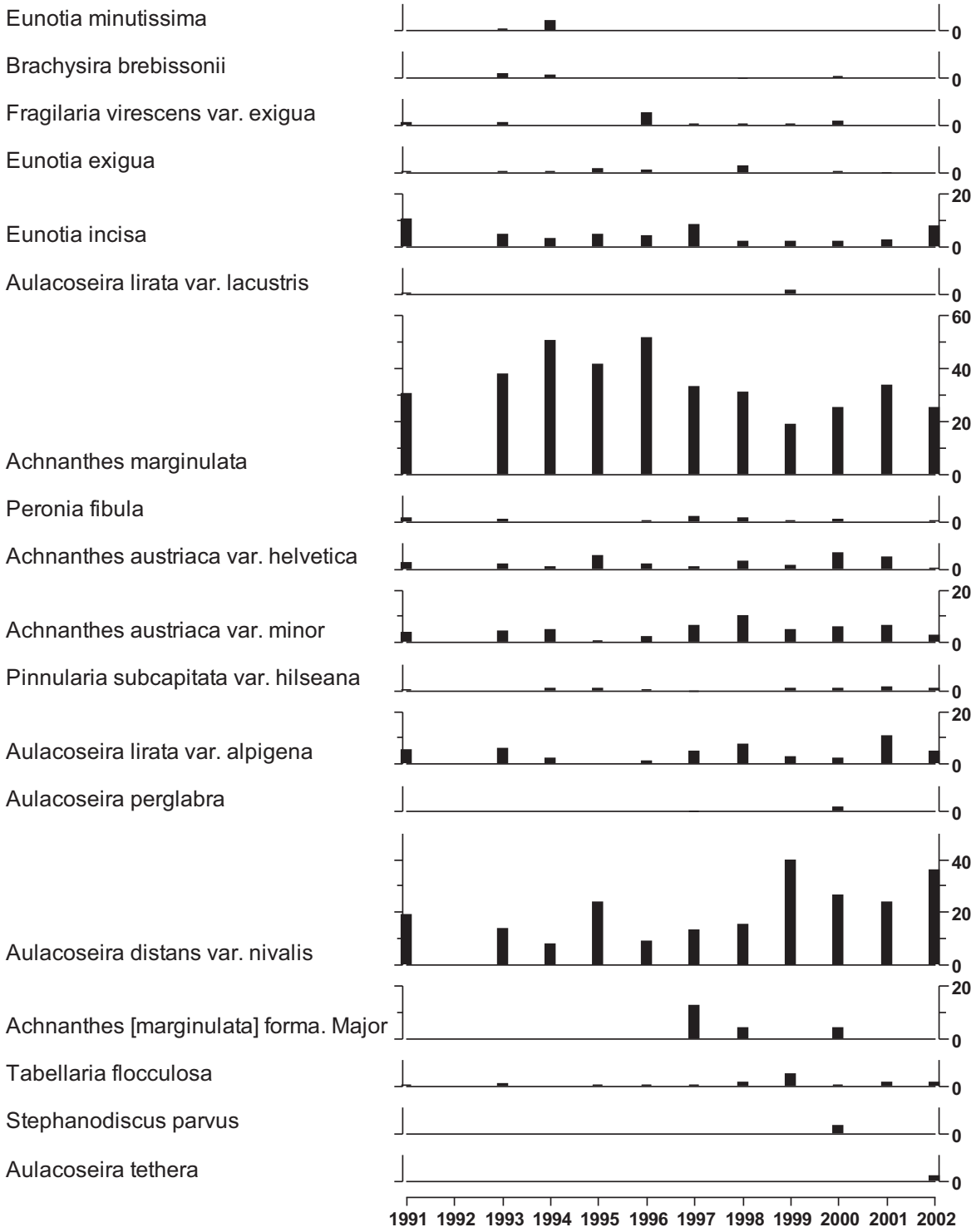
4.5b Lochnagar - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



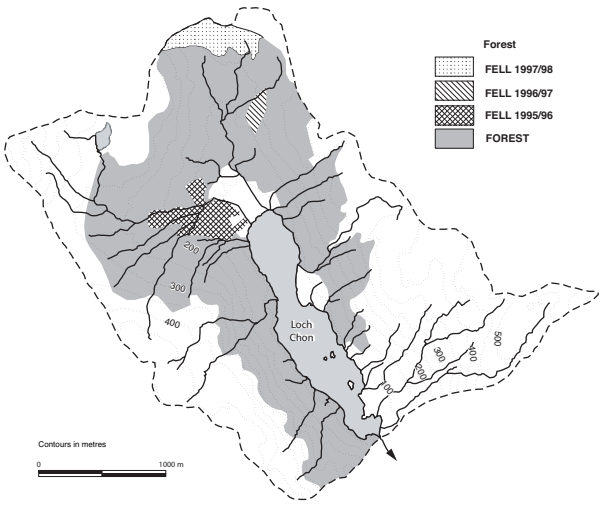
4.6 Lochnagar - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

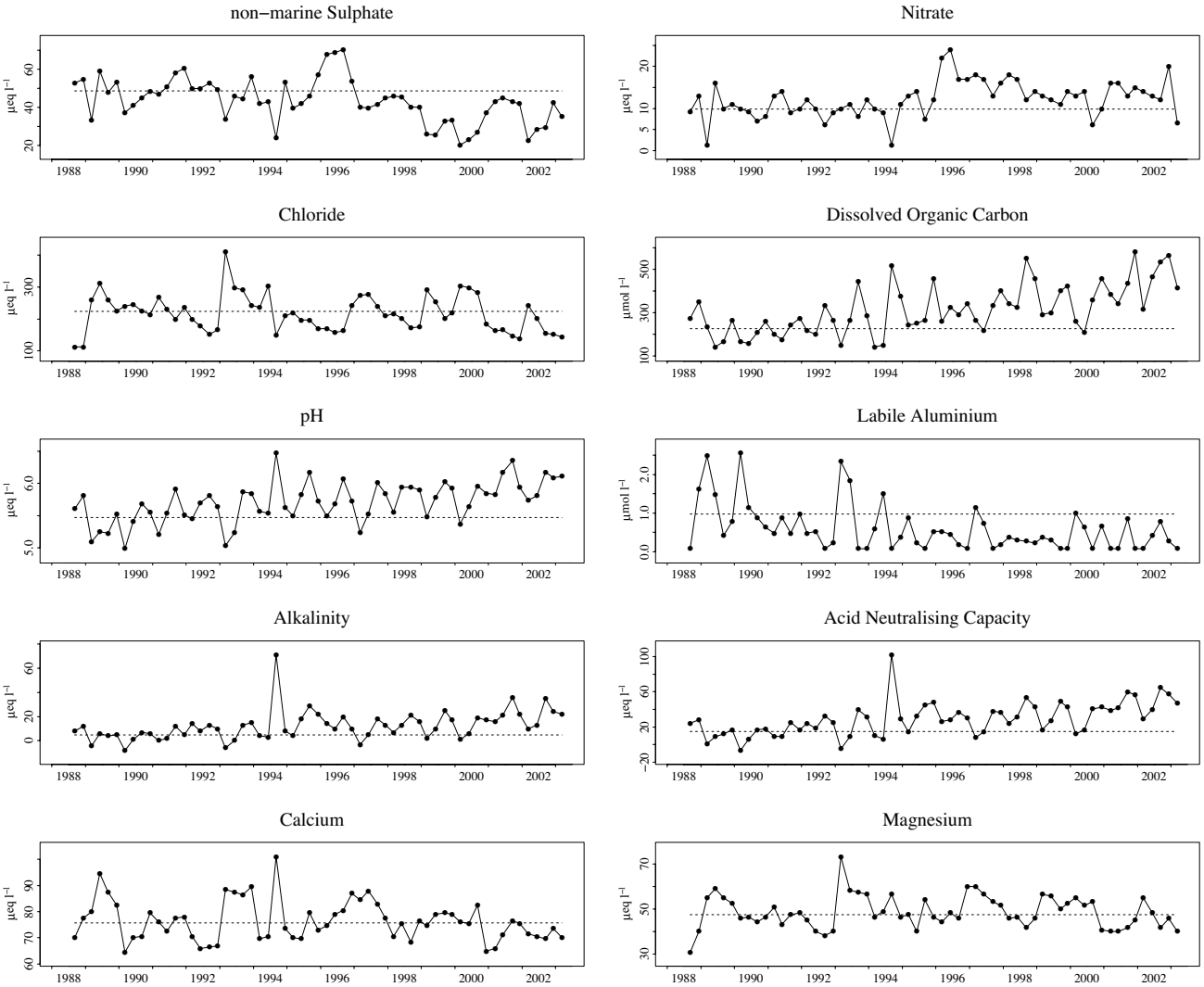


Site 5: Loch Chon

Grid reference:
NN 421051



5.1a Time series for key chemical determinands



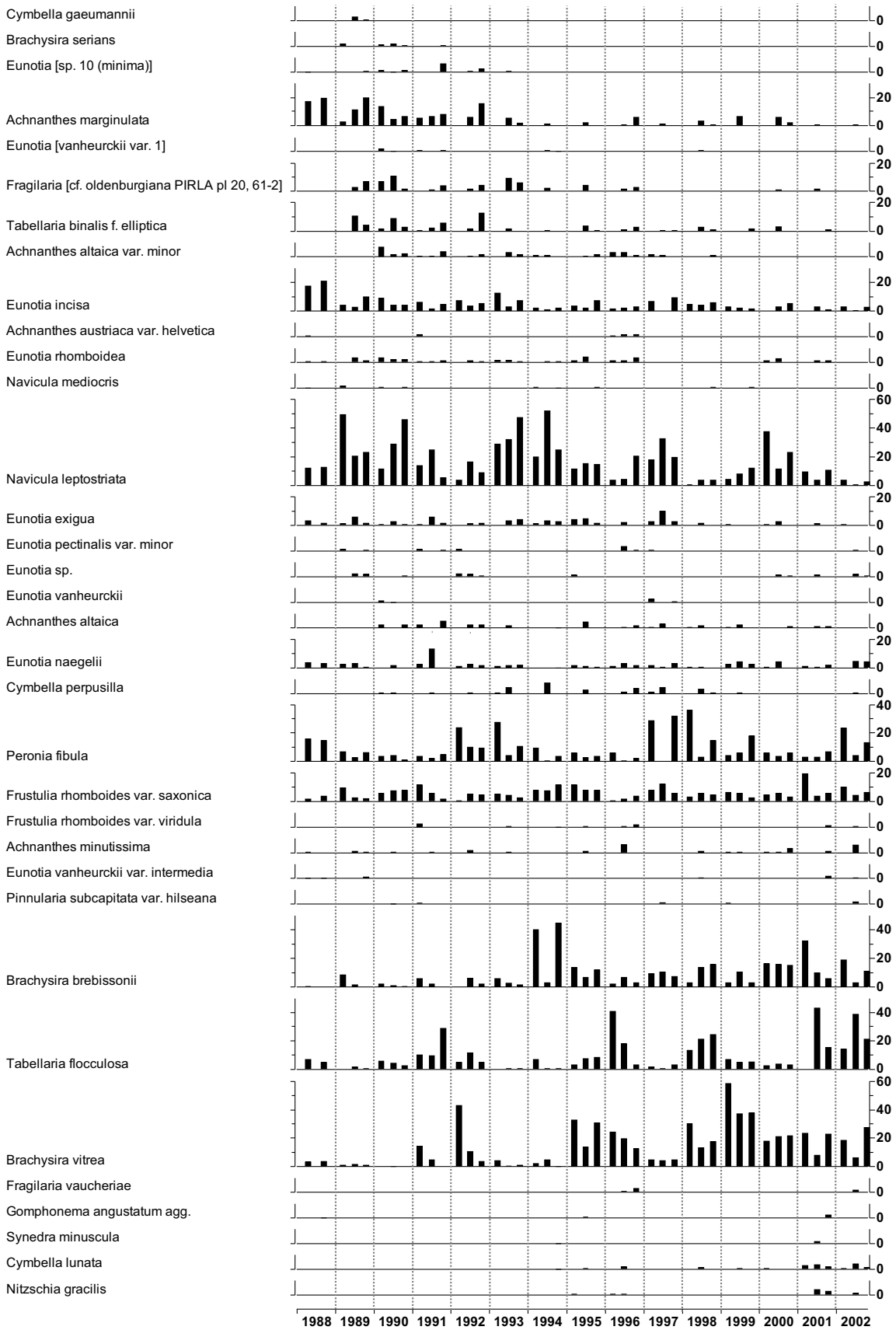
5.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Sep 1988	mean	48.8	9.9	223.7	5.47	5.3	14.8	38.4	75.6	46.9	186.4	5.6	65.5	26.3	2.7
- Mar 1993	st. dev	7.8	3.2	68.6	0.27	6.4	10.9	8.0	8.3	9.1	41.6	2.7	23.7	21.1	0.7
	min	33.4	1.3	112.8	4.99	-8.0	-6.7	23.0	64.4	30.4	117.5	2.6	33.0	2.0	1.7
	max	60.7	16.0	411.9	5.91	14.0	32.8	61.0	94.3	72.4	304.5	12.5	126.0	69.0	4.2
Apr 1993	mean	48.4	13.5	223.3	5.73	14.8	30.5	40.5	79.6	50.6	195.8	7.0	53.4	13.5	3.7
- Mar 1998	st. dev	11.4	5.3	48.3	0.30	15.6	21.0	5.5	8.6	5.9	29.9	2.1	20.2	13.7	1.2
	min	24.0	1.3	149.5	5.24	-3.0	6.5	31.0	69.4	39.5	130.5	2.6	14.0	2.0	1.7
	max	70.4	24.0	304.7	6.47	71.0	101.8	50.0	100.8	59.2	248.0	12.0	88.0	50.0	6.2
Apr 1998	mean	34.2	13.1	204.9	5.90	17.3	40.4	36.5	73.6	46.8	172.3	6.4	48.5	9.0	4.8
- Mar 2003	st. dev	8.3	3.3	55.5	0.23	9.2	14.7	4.8	4.7	5.9	36.2	0.7	17.1	8.0	1.3
	min	20.4	6.1	138.2	5.37	1.0	12.0	28.0	64.9	39.5	100.1	5.1	18.0	2.0	2.5
	max	45.5	20.0	304.7	6.35	36.0	64.7	47.0	82.3	55.9	243.6	7.7	84.0	27.0	7.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

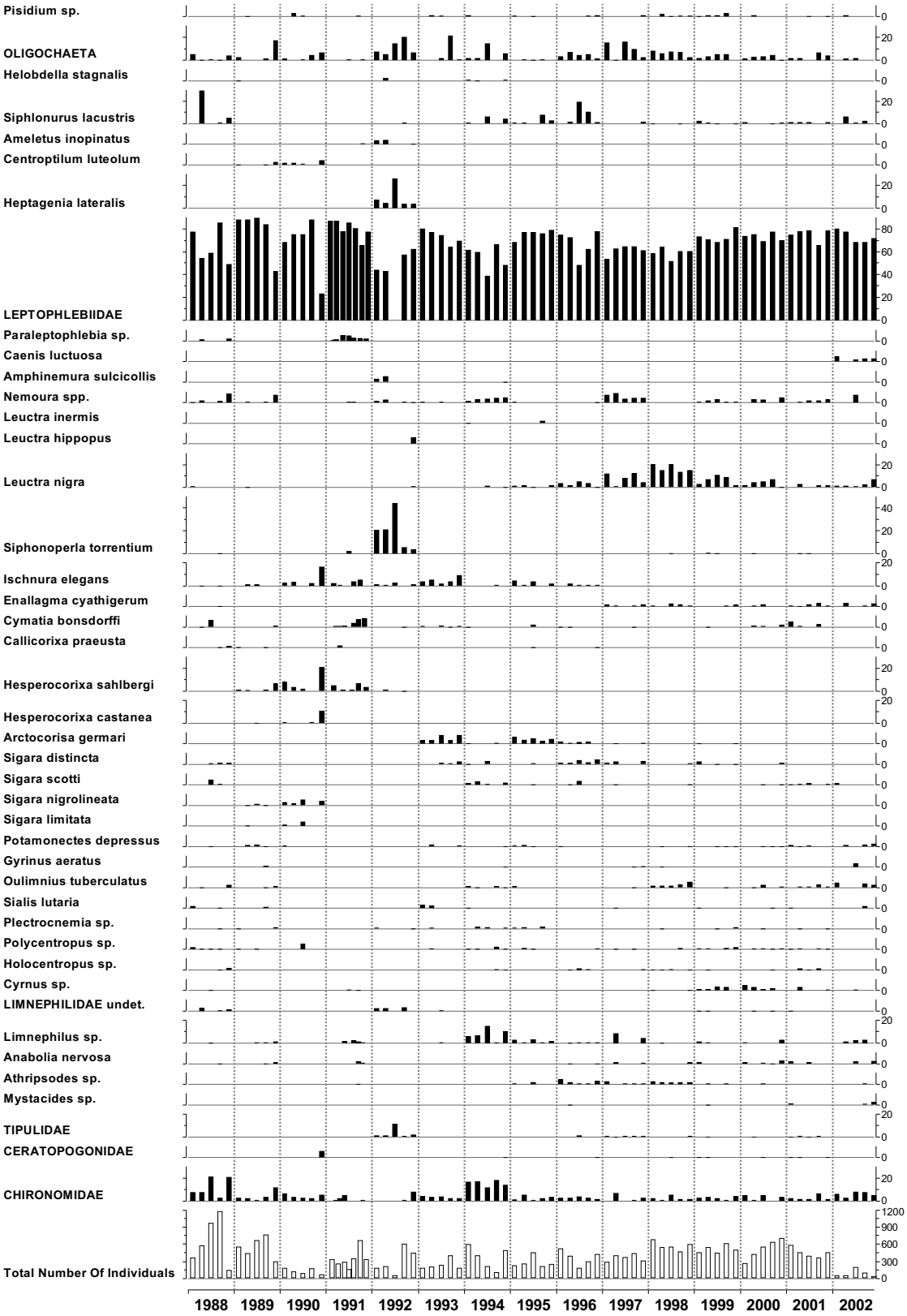
5.2 Loch Chon - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



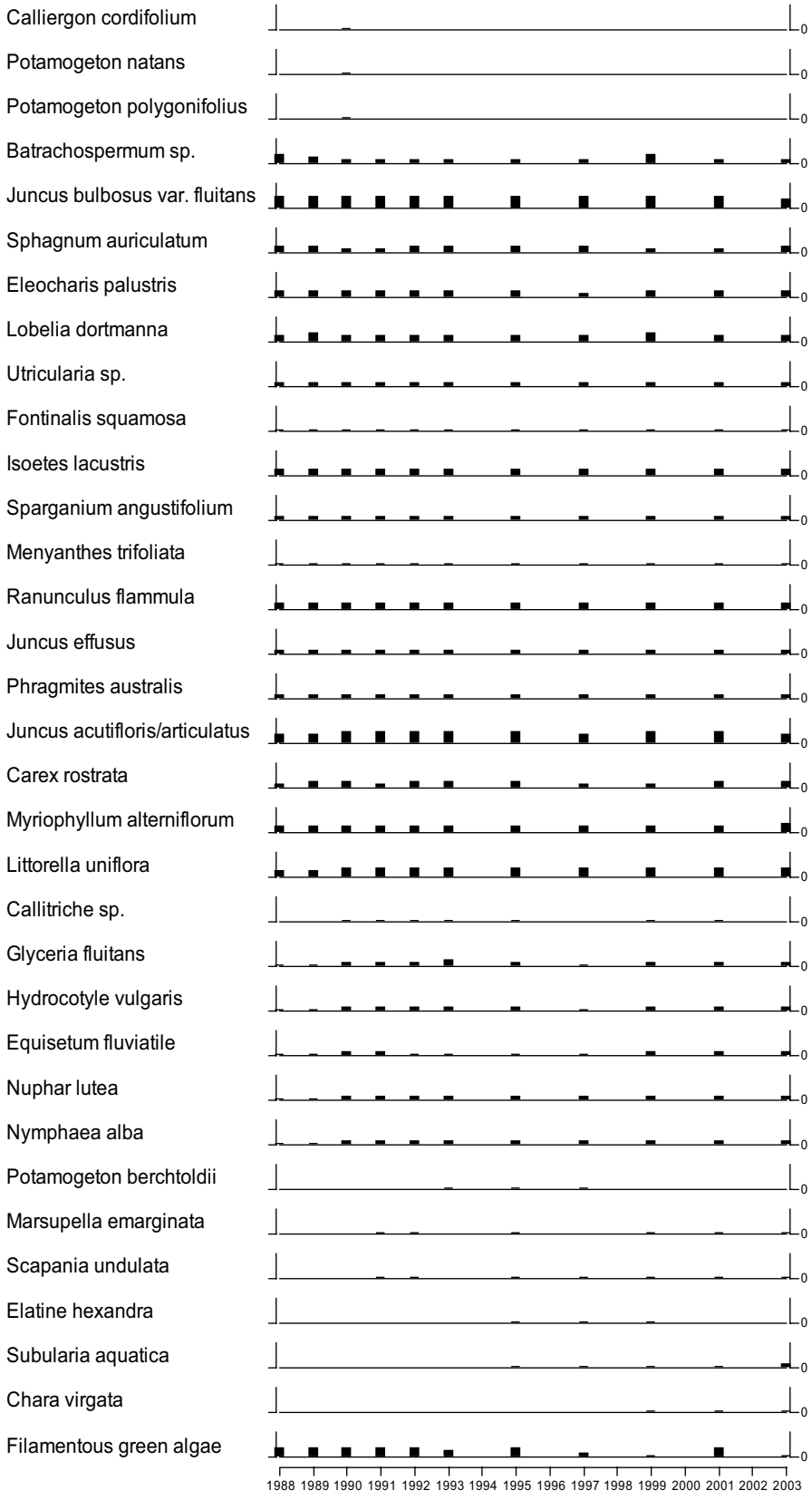
5.3 Loch Chon - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



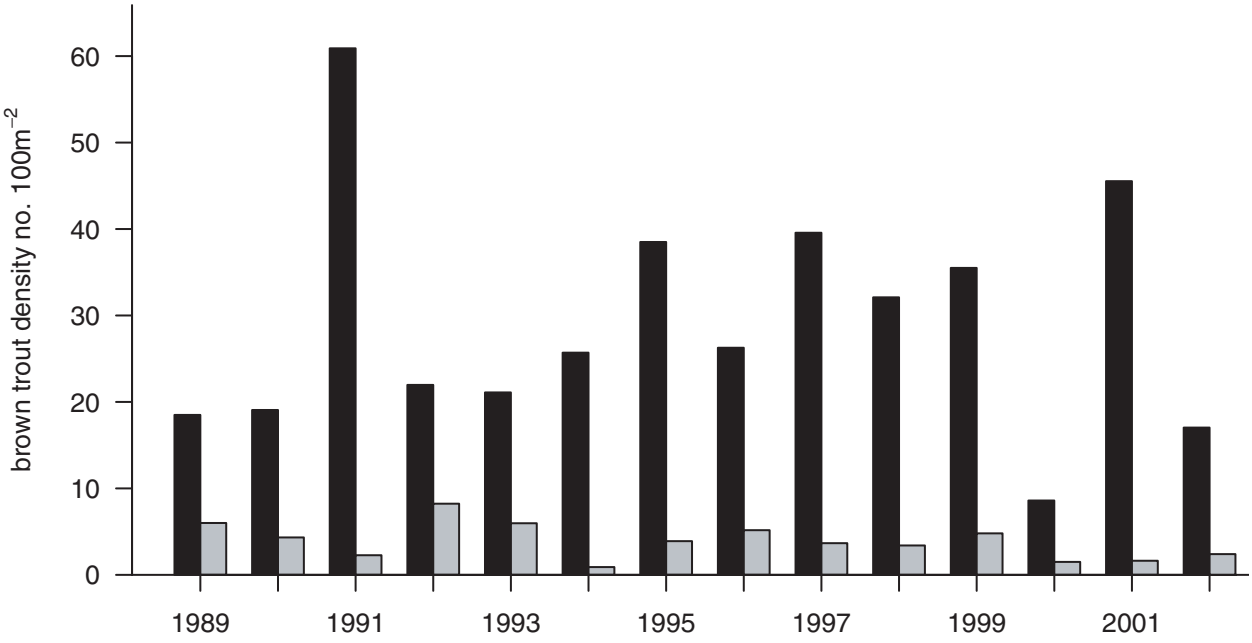
5.4 Loch Chon - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



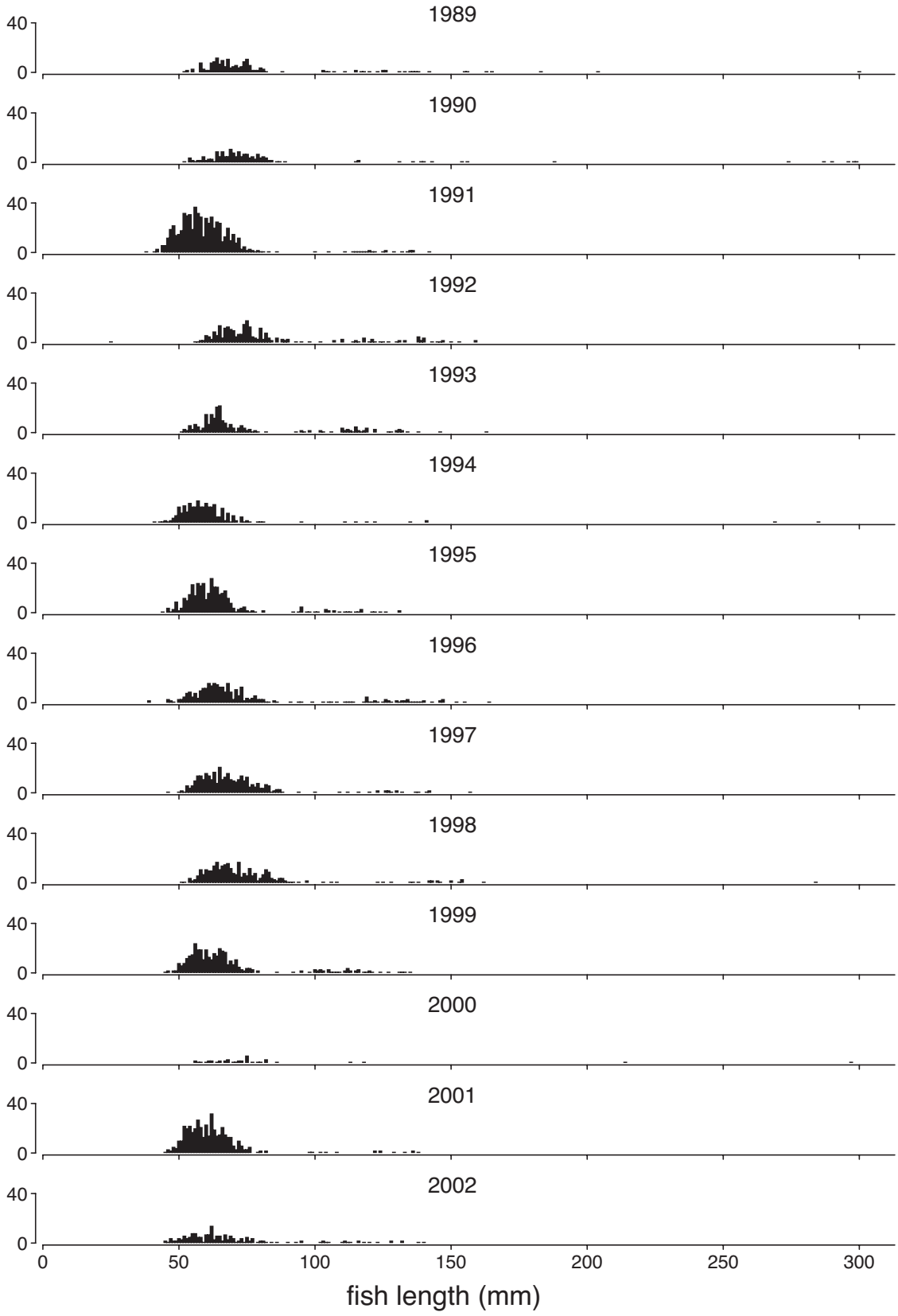
5.5a Loch Chon - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



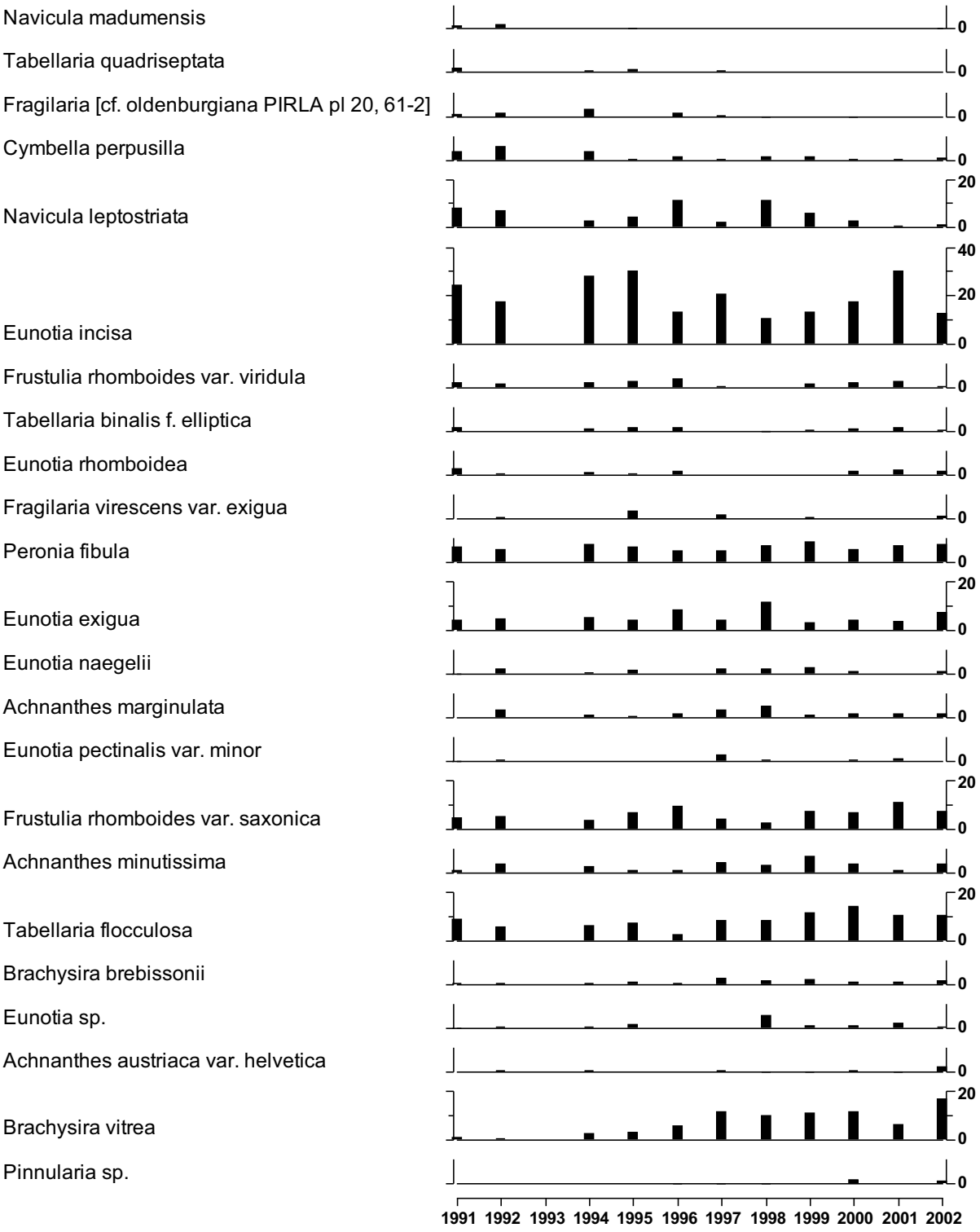
5.5b Loch Chon - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



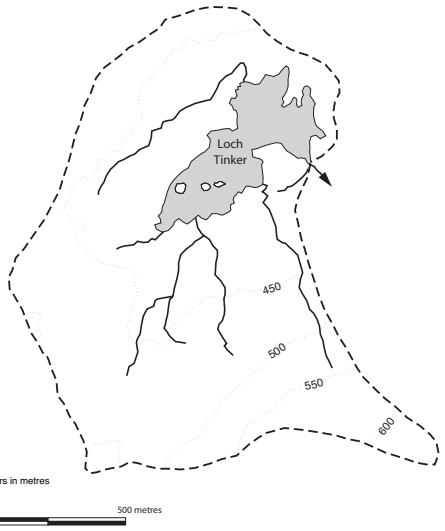
5.6 Loch Chon - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

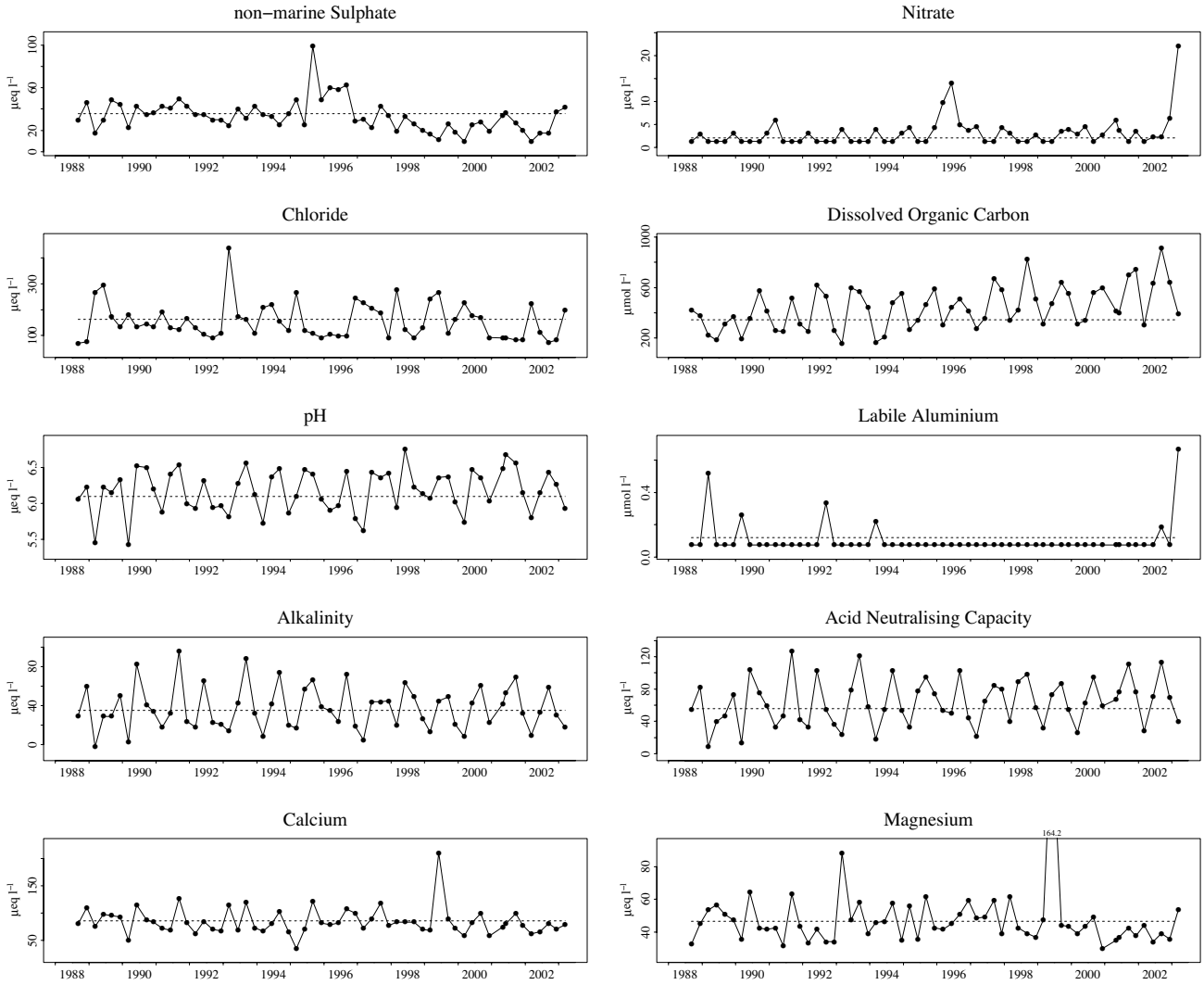


Site 6: Loch Tinker

Grid reference:
NN 445068



6.1a Time series for key chemical determinands



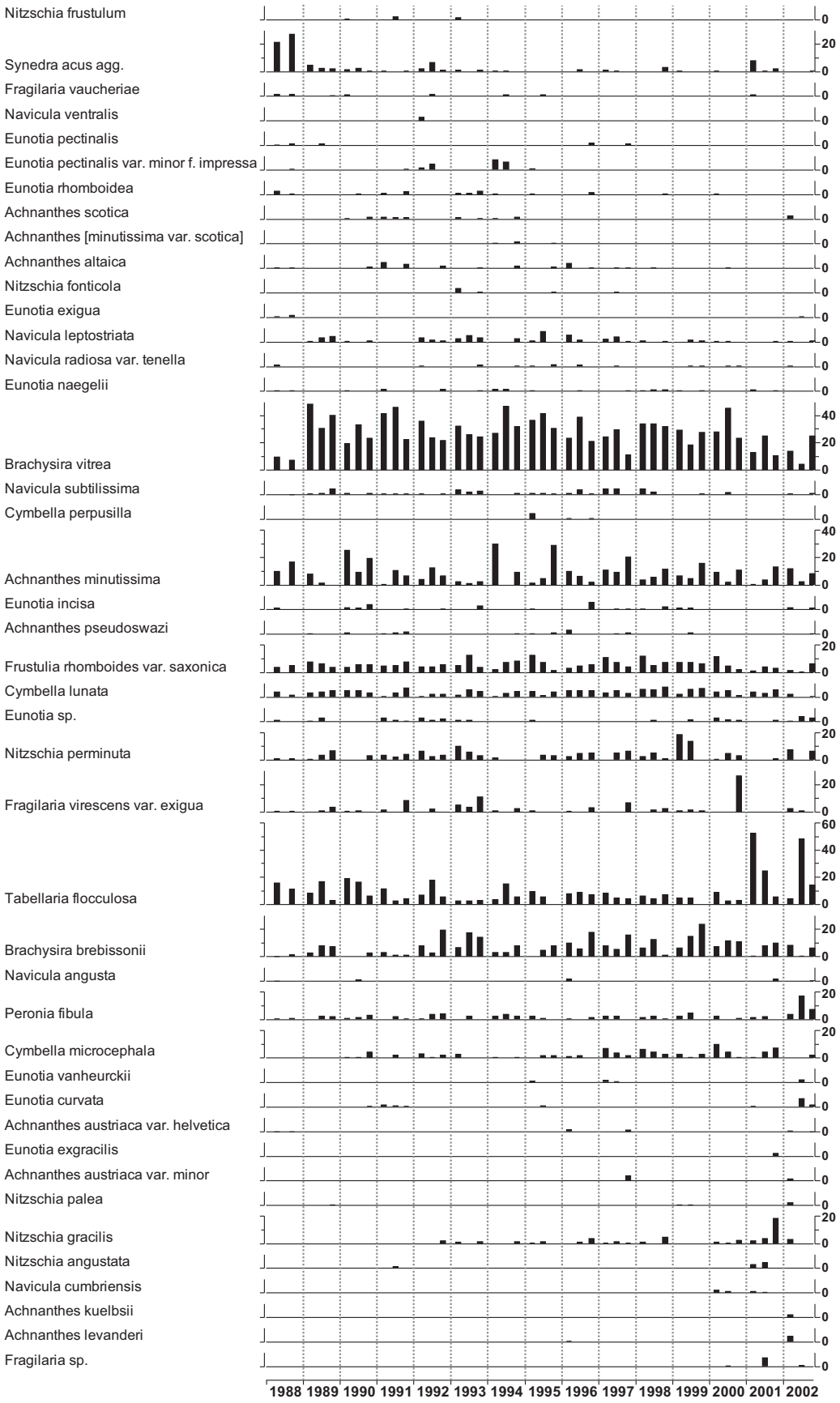
6.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Sep 1988	mean	36.0	2.0	162.9	6.10	35.3	55.5	31.0	85.8	45.8	140.1	7.2	19.5	3.3	4.1
- Mar 1993	st. dev	8.9	1.3	88.3	0.32	25.7	31.7	9.6	20.1	14.0	56.1	4.5	10.4	3.2	1.6
	min	17.9	1.3	70.5	5.42	-2.0	8.6	21.0	49.9	31.3	78.3	2.6	5.0	2.0	1.9
	max	49.6	6.0	440.1	6.54	96.0	126.8	62.0	126.7	87.2	321.9	18.2	42.0	14.0	7.4
Apr 1993	mean	41.2	3.6	163.2	6.16	39.8	65.3	31.7	84.3	48.4	145.3	7.7	21.0	2.2	5.2
- Mar 1998	st. dev	18.5	3.2	62.3	0.29	22.8	27.9	5.5	21.5	8.6	39.0	3.5	9.3	0.9	1.7
	min	19.1	1.3	90.3	5.61	5.0	18.3	23.0	34.9	34.5	95.7	2.6	7.0	2.0	2.0
	max	99.2	14.0	276.5	6.56	88.0	121.8	42.0	121.3	60.9	243.6	14.6	45.0	6.0	8.1
Apr 1998	mean	23.8	3.9	141.6	6.25	37.5	69.2	27.2	83.0	46.3	124.4	6.1	22.7	3.0	6.4
- Mar 2003	st. dev	9.2	4.6	62.0	0.28	18.7	25.6	4.4	32.1	27.8	44.3	1.2	13.4	3.6	2.1
	min	9.8	1.3	73.3	5.74	8.0	26.3	21.0	57.9	29.6	60.9	3.8	2.0	2.0	3.6
	max	41.6	22.0	268.0	6.75	69.0	113.4	35.0	210.1	162.1	248.0	7.9	70.0	18.0	11.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

6.2 Loch Tinker - epilithic diatom data

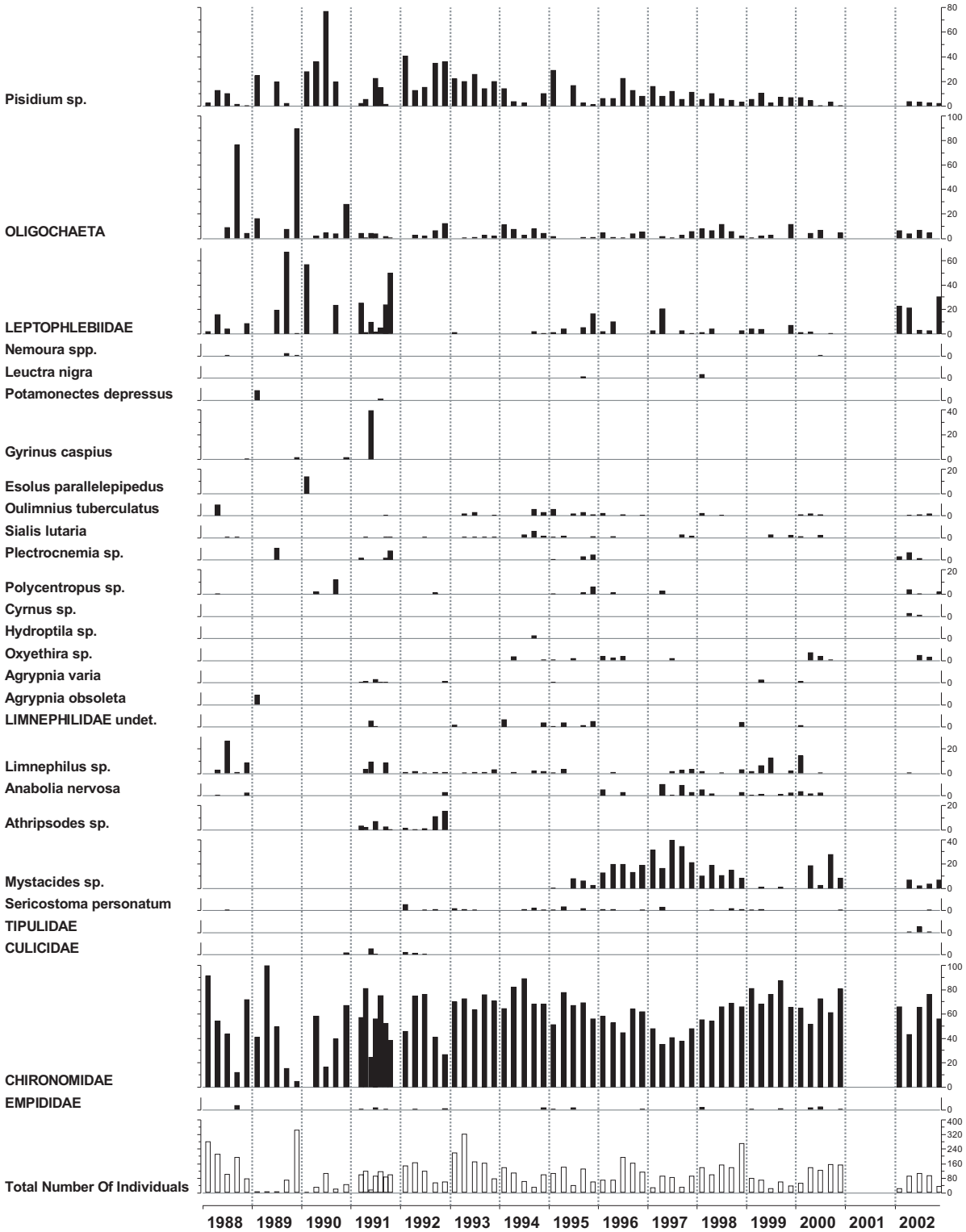
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



6.3 Loch Tinker - macroinvertebrate data

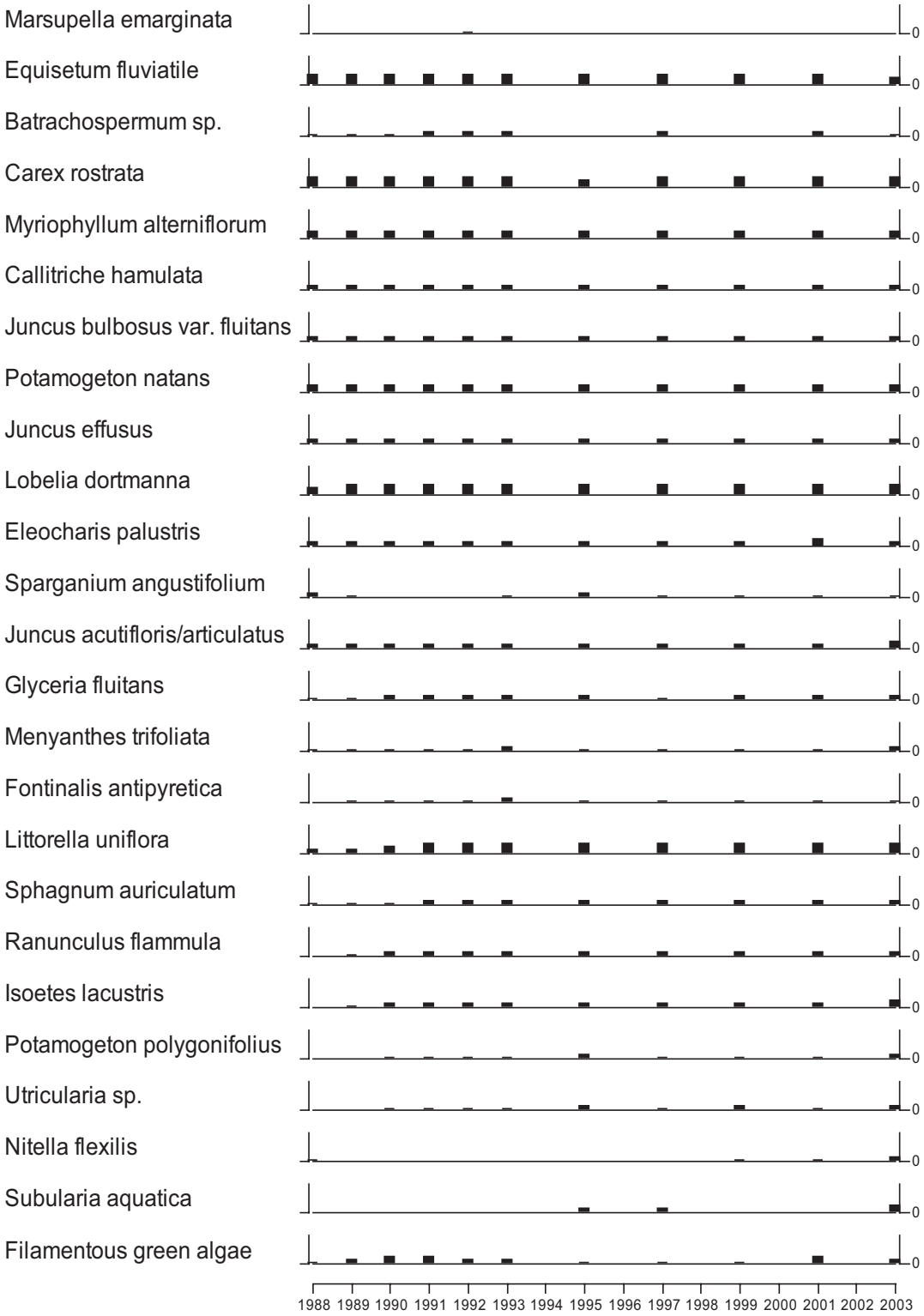
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

no data for 2001



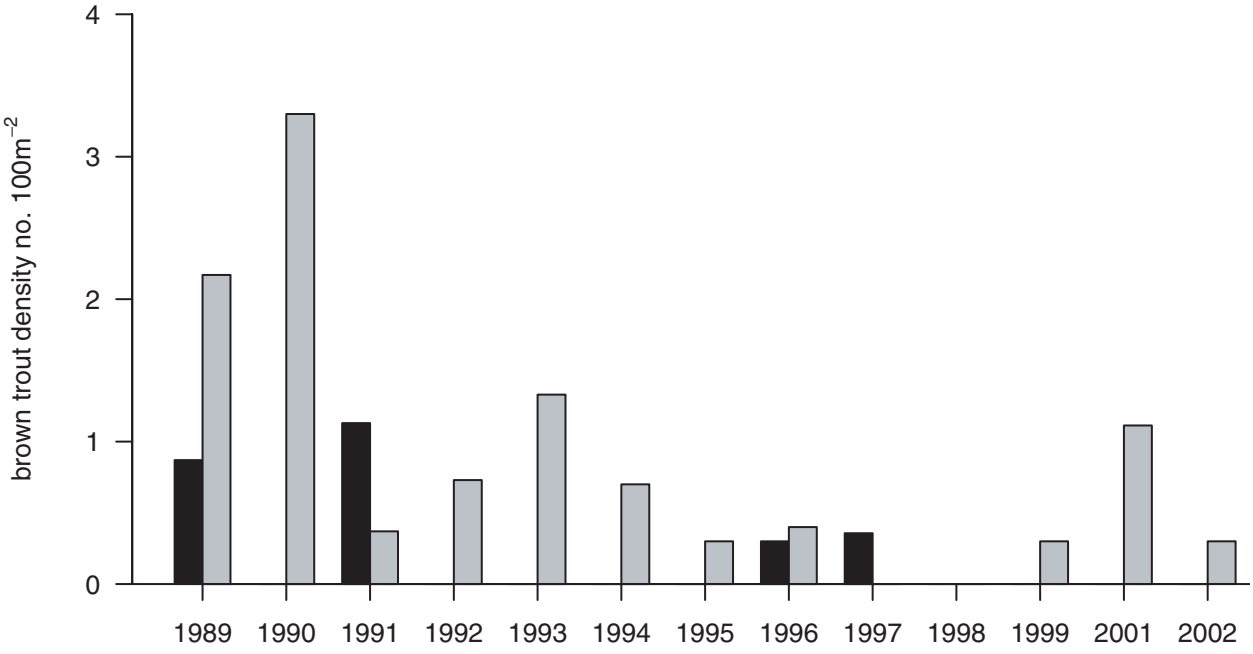
6.4 Loch Tinker - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



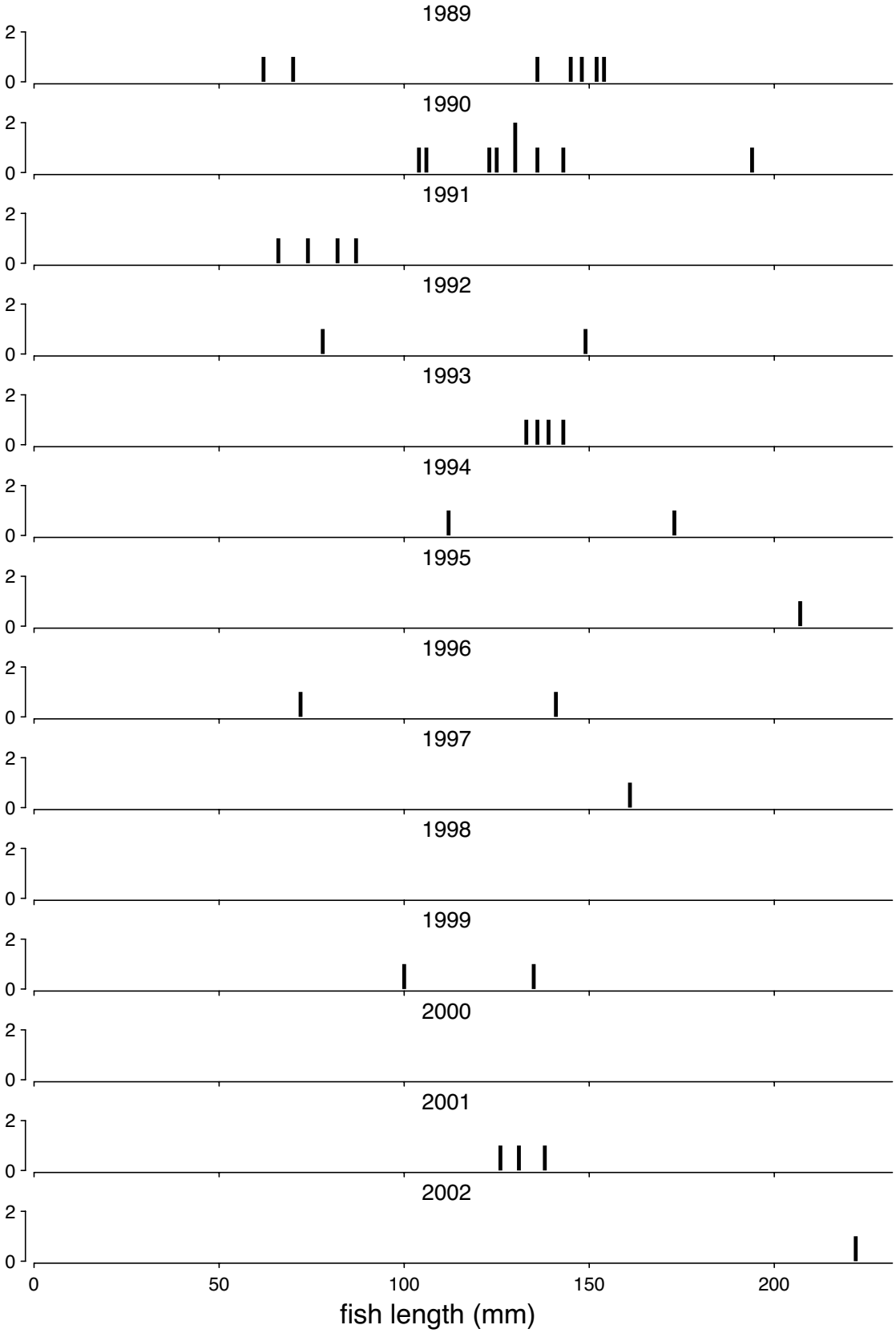
6.5a Loch Tinker - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



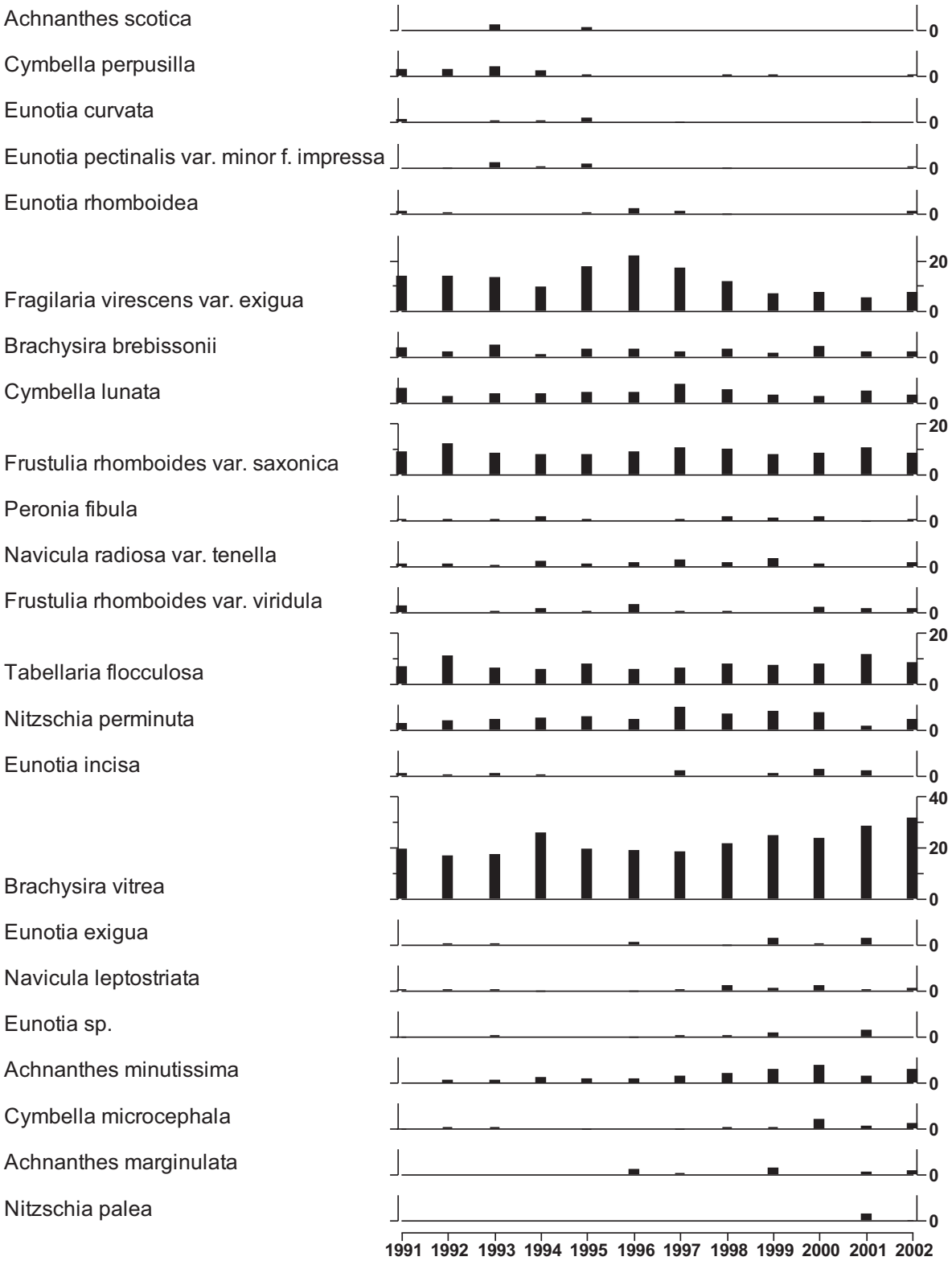
6.5b Loch Tinker - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



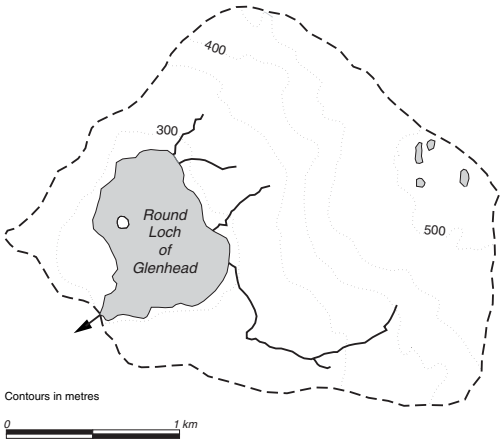
6.6 Loch Tinker - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

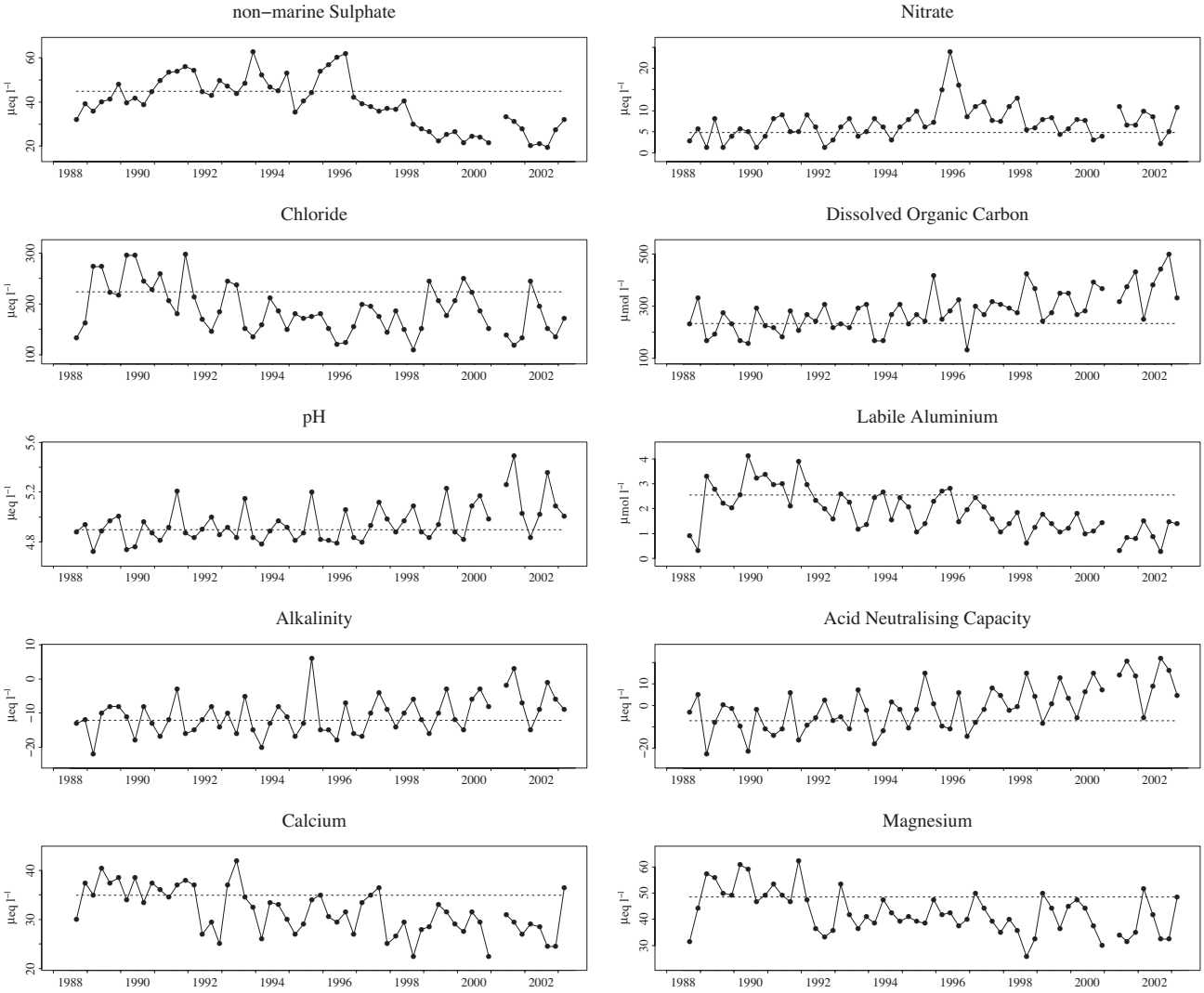


Site 7: Round Loch of Glenhead

Grid reference:
NX 450804



7.1a Time series for key chemical determinands



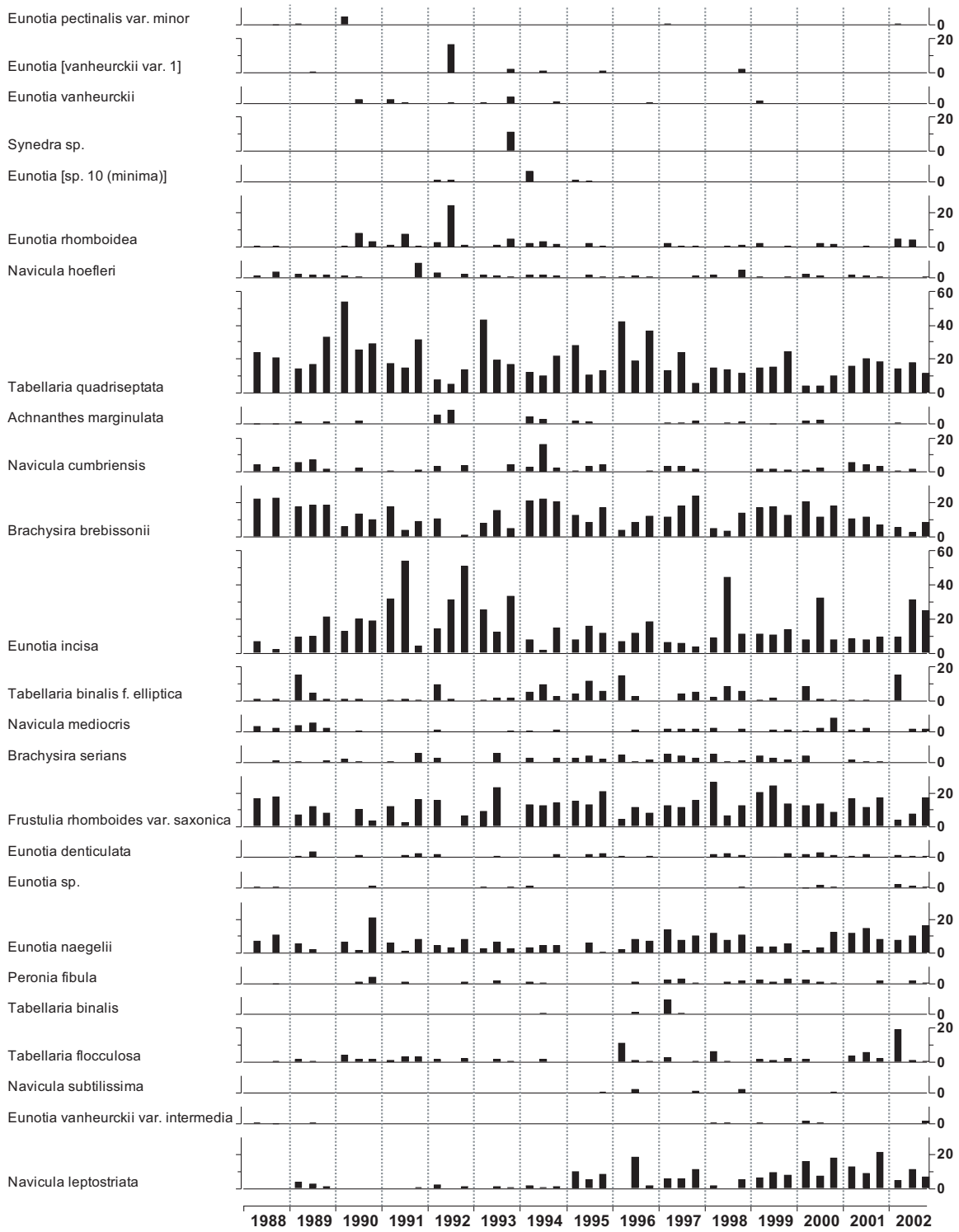
7.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ c\ m^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Sep 1988 - Mar 1993	mean	45.1	4.8	223.9	4.90	-12.1	-7.1	39.4	34.9	47.9	193.9	9.0	98.5	68.6	2.8
	st. dev	6.8	2.6	51.7	0.11	4.4	8.1	7.0	4.2	9.0	35.5	2.8	21.5	25.4	0.6
	min	32.0	1.3	132.6	4.72	-22.0	-22.9	28.0	25.0	31.3	139.2	2.6	69.0	9.0	1.9
	max	56.3	9.0	299.0	5.21	-3.0	6.0	49.0	40.4	61.7	248.0	13.3	146.0	111.0	4.0
Apr 1993 - Mar 1998	mean	46.8	9.2	169.5	4.91	-11.9	-3.1	33.9	31.5	40.6	153.3	7.0	90.8	51.5	3.2
	st. dev	9.1	4.8	29.3	0.13	6.1	8.7	3.1	4.2	3.7	14.7	2.0	17.7	15.9	0.8
	min	35.4	3.0	121.3	4.78	-20.0	-18.3	28.0	25.0	34.5	130.5	2.6	55.0	28.0	1.6
	max	63.0	24.0	237.0	5.20	6.0	14.9	38.0	41.9	49.4	178.4	9.2	120.0	76.0	5.0
Apr 1998 - Mar 2003	mean	26.6	7.2	176.2	5.05	-7.7	7.6	30.3	28.5	38.3	150.9	7.0	73.4	31.1	4.2
	st. dev	5.3	2.8	43.9	0.18	5.1	9.0	6.5	3.5	7.5	32.6	1.8	12.9	12.6	0.9
	min	19.6	2.9	110.0	4.82	-16.0	-8.3	17.0	22.5	25.5	100.1	4.6	43.0	7.0	2.9
	max	40.7	13.0	251.1	5.49	3.0	22.1	42.0	36.4	51.0	208.8	11.0	96.0	50.0	6.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

7.2 Round Loch of Glenhead - epilithic diatom data

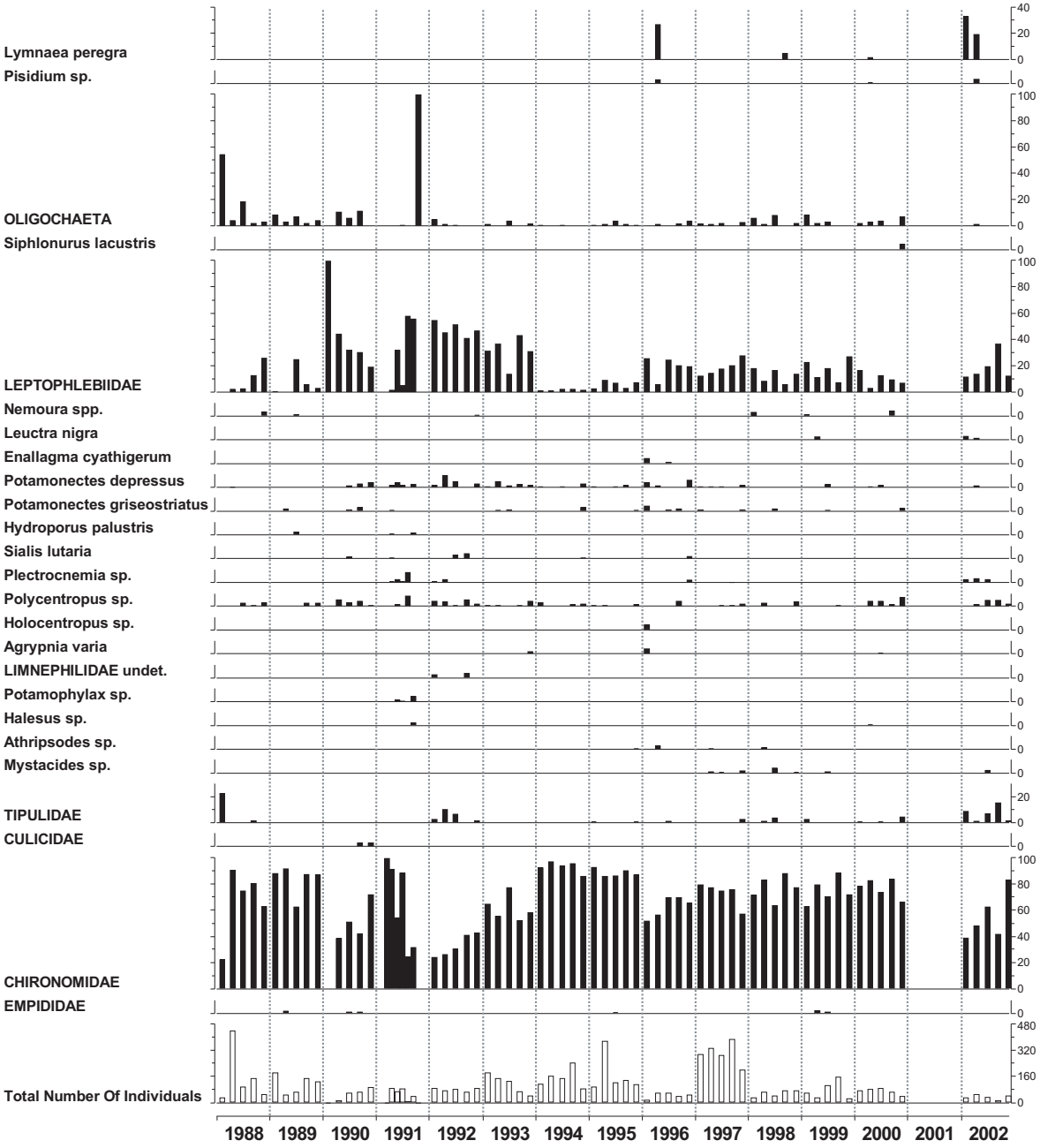
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



7.3 Round Loch of Glenhead - macroinvertebrate data

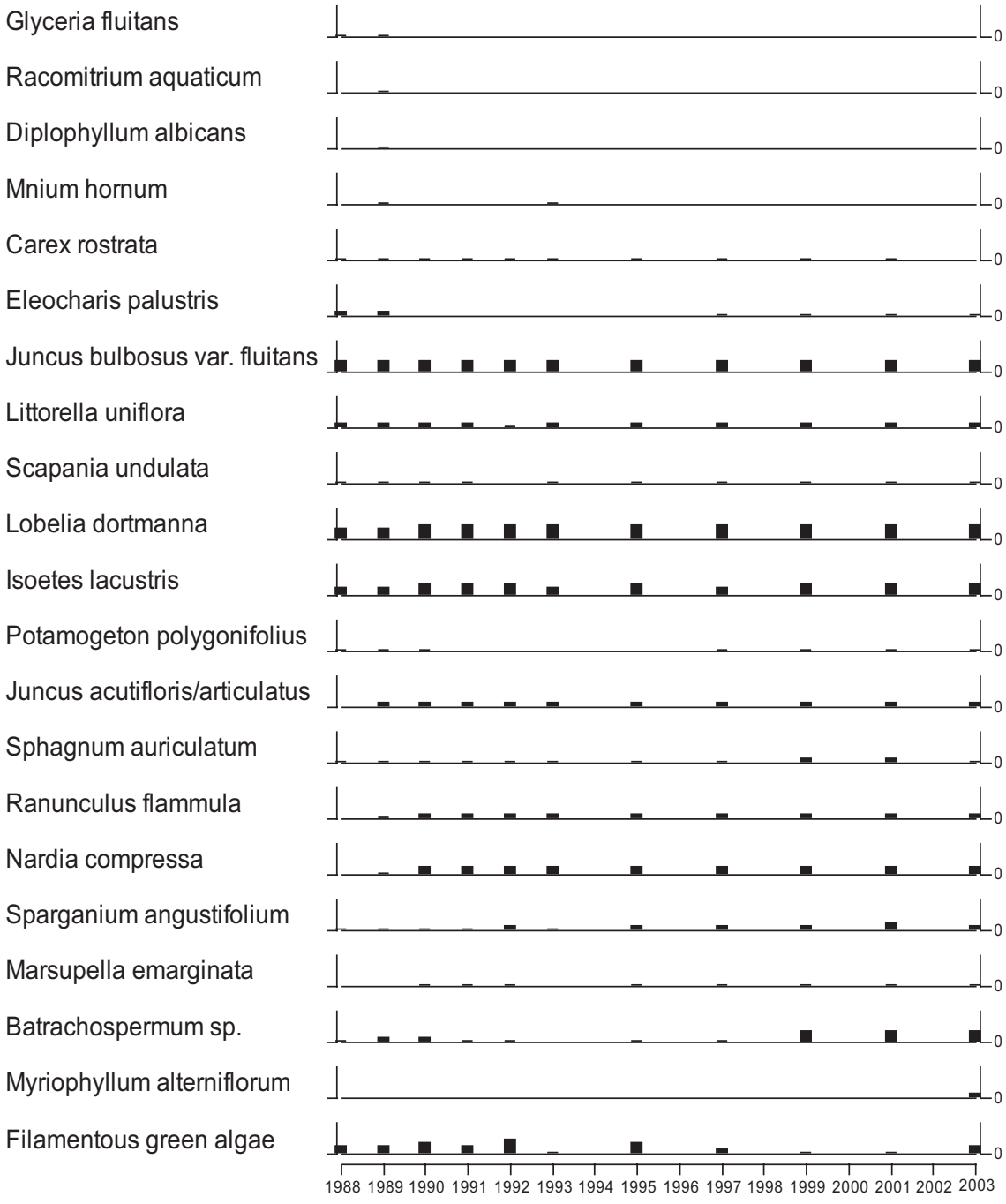
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

no data for 2001



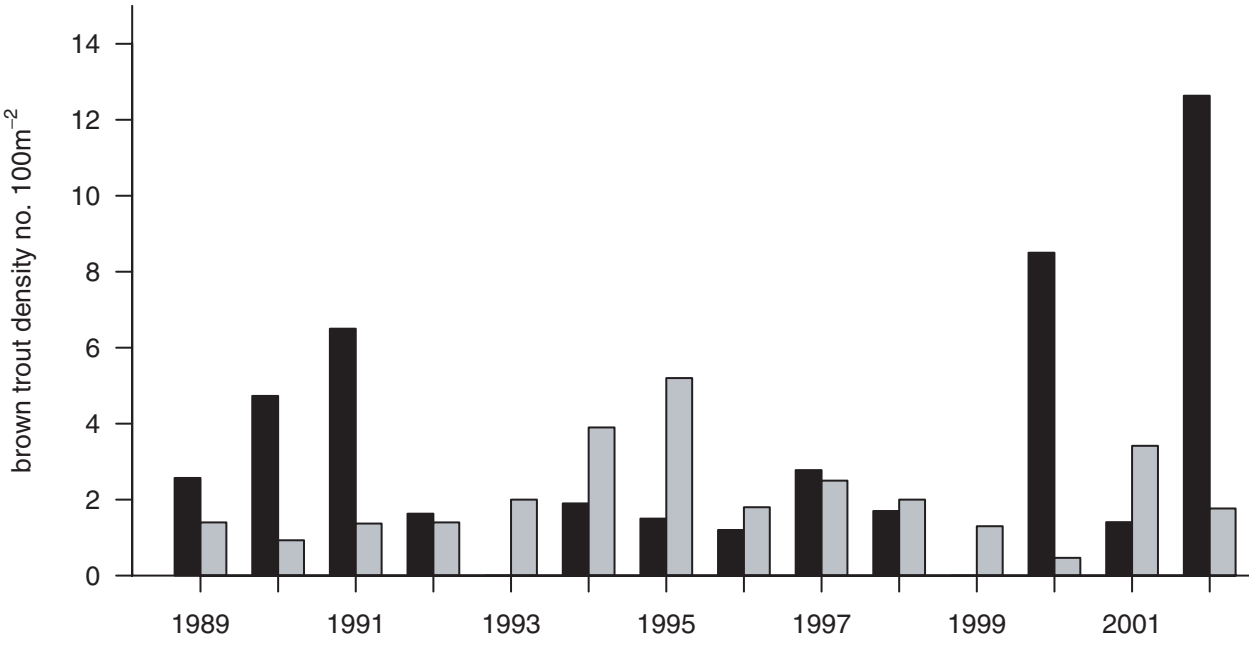
7.4 Round Loch of Glenhead - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



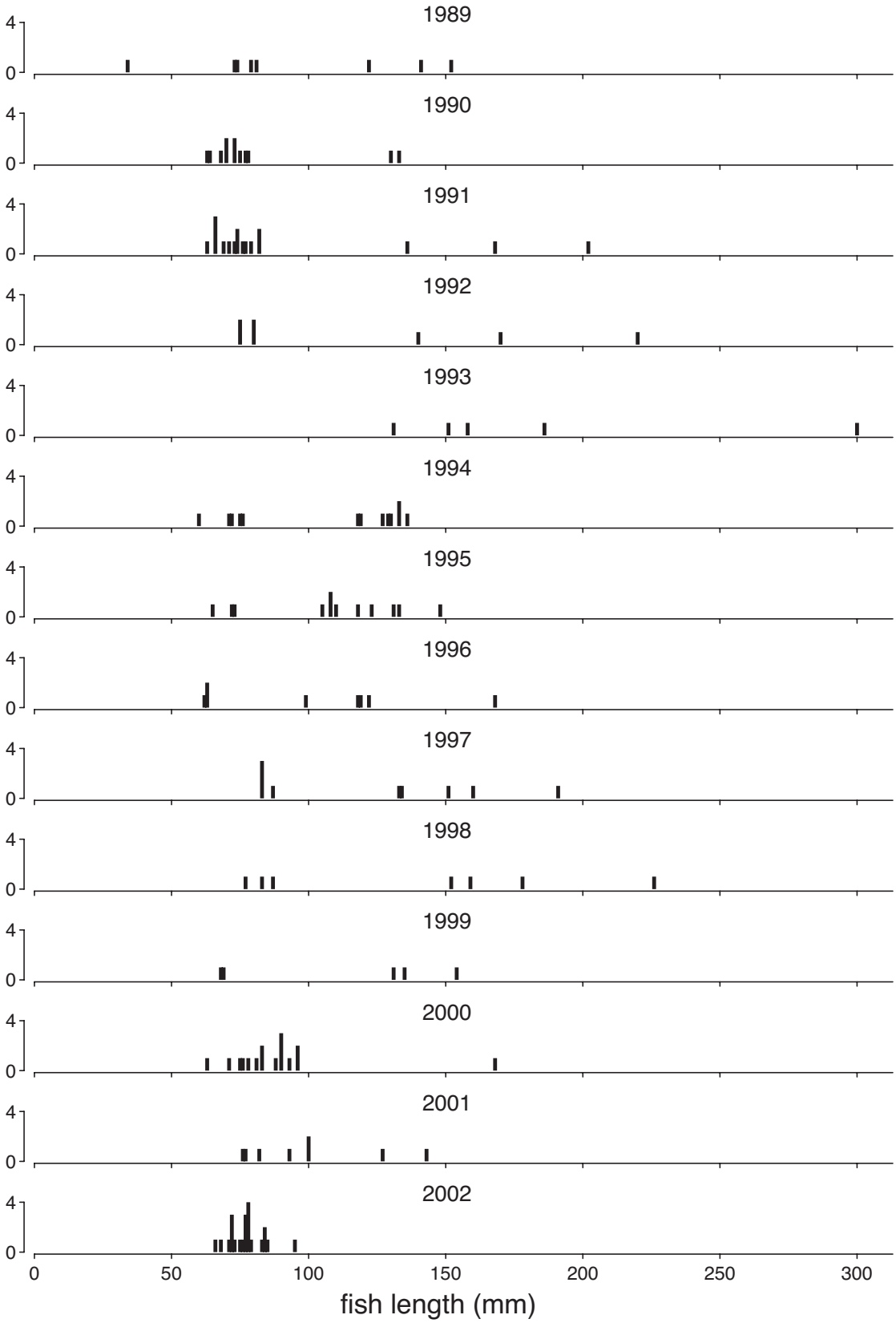
7.5a Round Loch of Glenhead - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



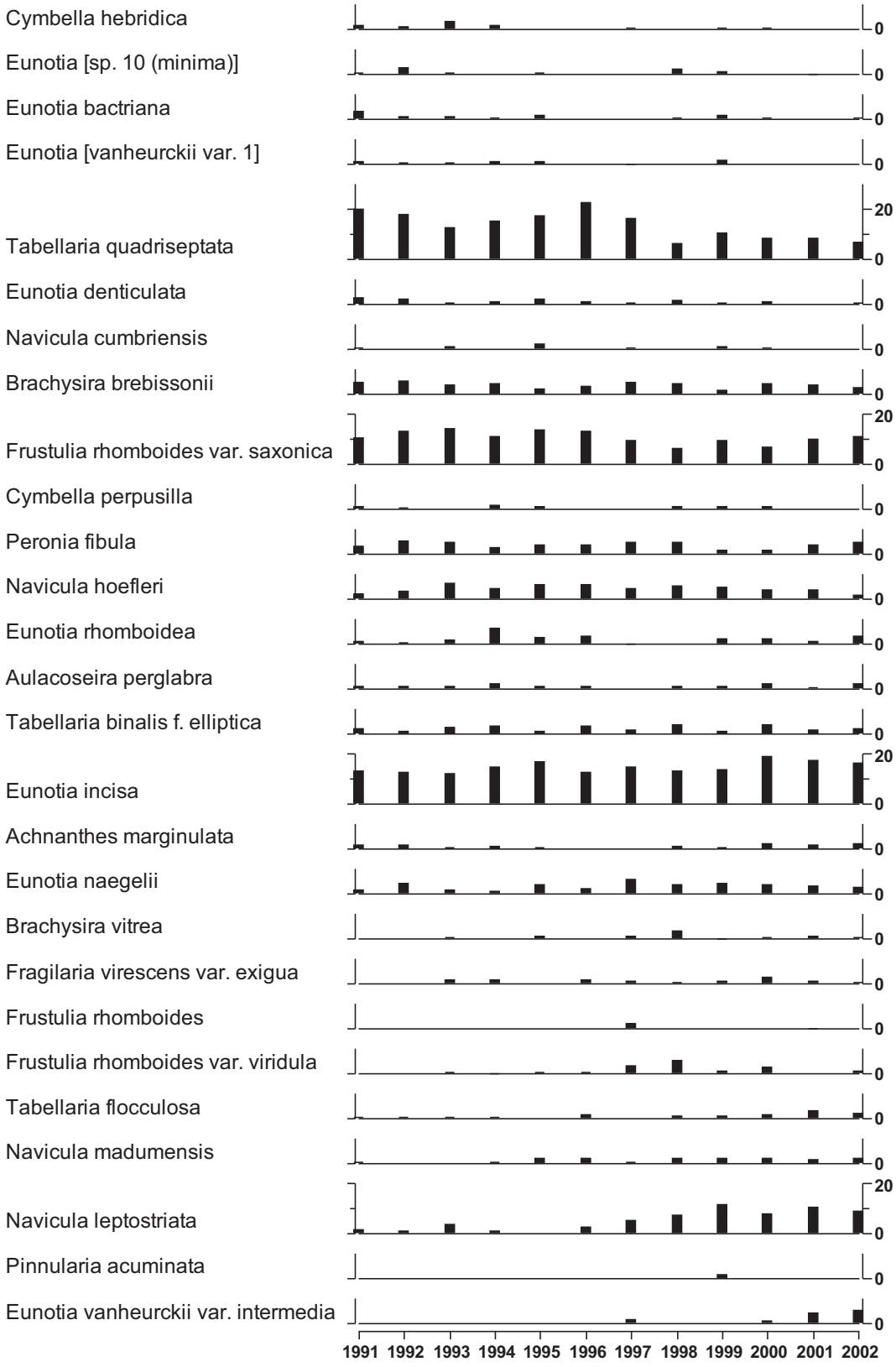
7.5b Round Loch of Glenhead - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



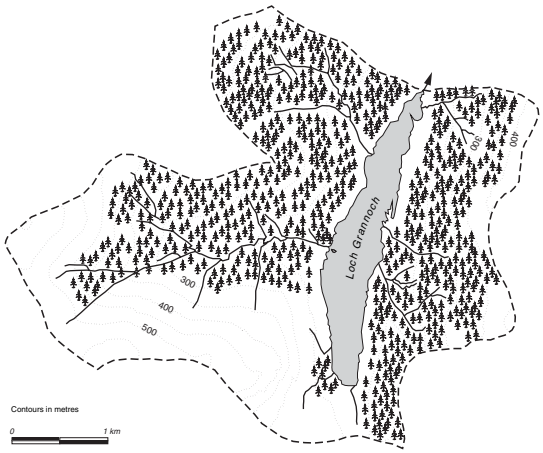
7.6 Round Loch of Glenhead - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

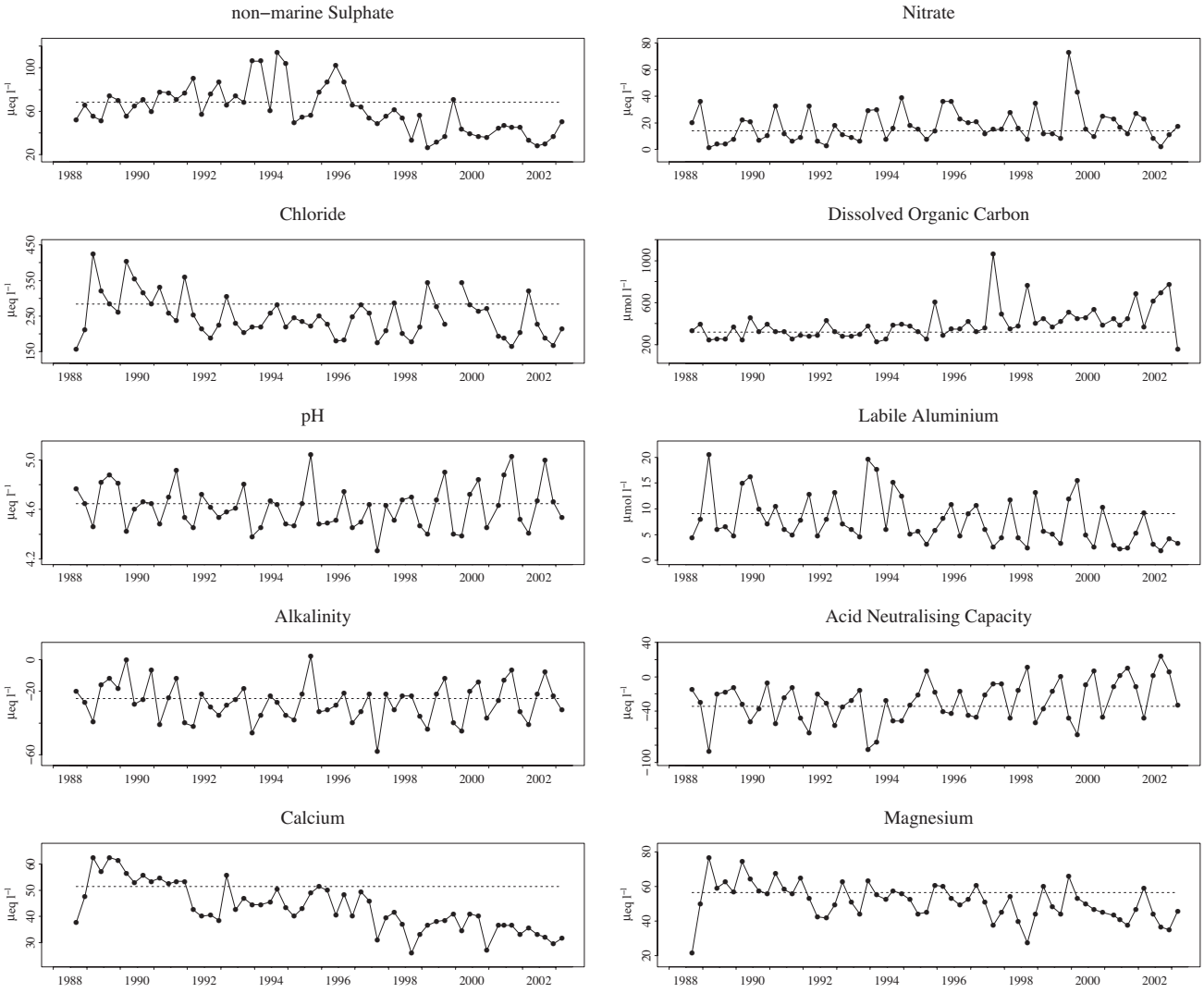


Site 8: Loch Grannoch

Grid reference:
NX 542700



8.1a Time series for key chemical determinands



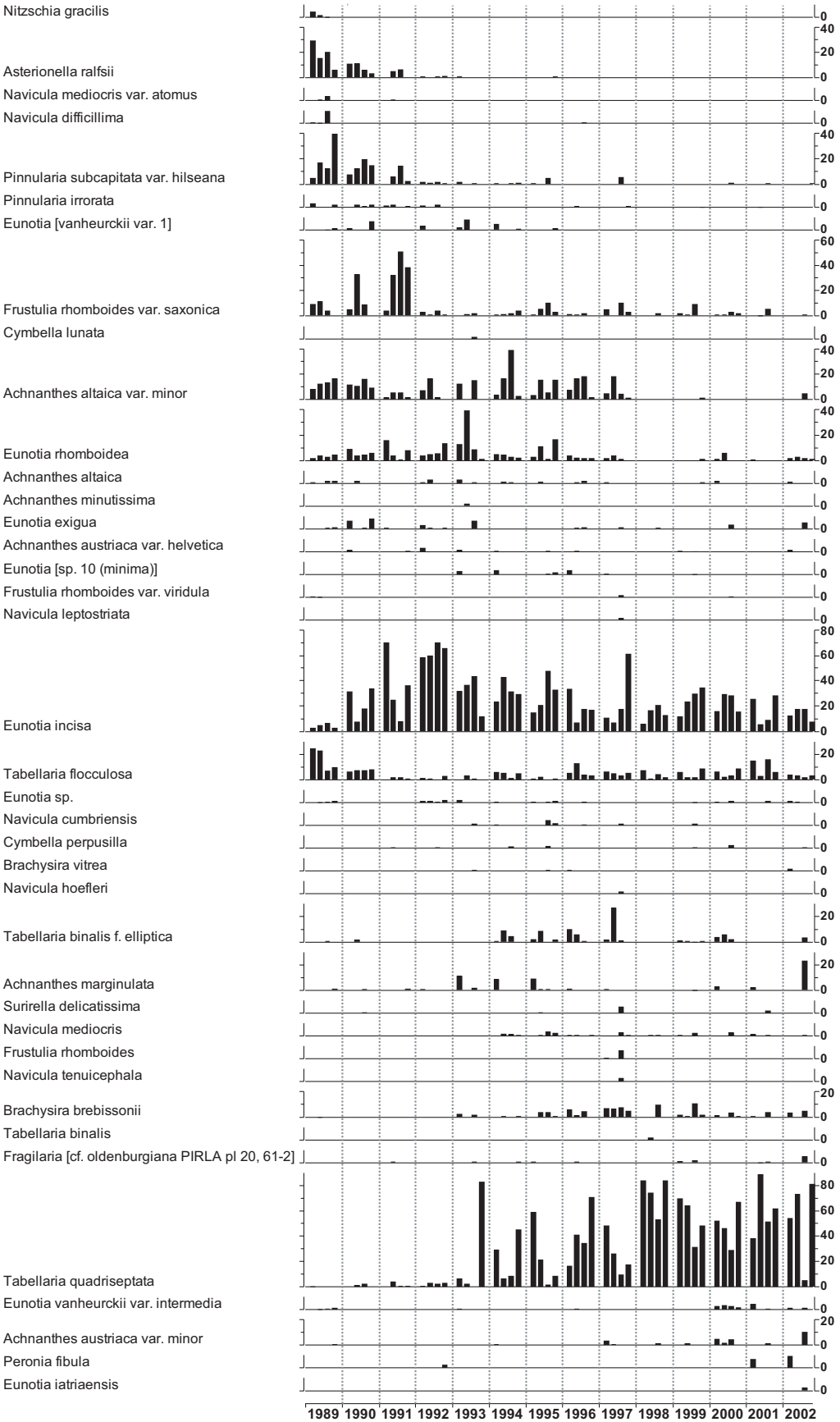
8.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ c\ m^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Sep 1988	mean	68.5	13.9	284.2	4.65	-25.9	-34.7	53.2	51.4	55.8	239.3	4.7	316.4	246.1	3.8
- Mar 1993	st. dev	11.2	10.8	71.9	0.15	10.7	21.2	12.6	8.0	12.3	45.3	2.8	148.9	121.3	0.8
	min	51.9	1.3	158.0	4.42	-42.0	-87.3	31.0	37.4	21.4	147.9	2.6	153.0	118.0	2.9
	max	90.2	35.7	426.0	4.92	-7.0	-6.7	78.0	62.4	75.7	313.2	10.7	715.0	552.0	5.5
Apr 1993	mean	74.9	19.9	232.2	4.57	-29.5	-33.9	51.8	44.3	51.6	208.1	5.0	310.4	228.7	4.7
- Mar 1998	st. dev	21.7	10.1	33.0	0.17	12.1	22.7	6.1	4.9	6.6	19.1	2.2	150.8	129.9	2.2
	min	48.4	6.0	174.9	4.27	-58.0	-84.3	41.0	30.9	37.0	161.0	2.6	106.0	72.0	2.7
	max	114.3	39.0	287.7	5.04	2.0	6.2	62.0	51.4	62.5	239.3	11.0	646.0	527.0	12.8
Apr 1998	mean	41.3	20.0	235.9	4.65	-26.1	-17.0	45.5	34.8	45.1	202.3	5.4	248.6	153.7	5.8
- Mar 2003	st. dev	10.9	15.8	57.2	0.20	11.9	26.0	10.8	4.2	8.9	44.7	1.3	124.6	109.3	1.9
	min	26.7	4.1	163.6	4.39	-45.0	-67.3	25.0	25.9	27.1	126.2	3.1	107.0	53.0	1.9
	max	70.8	73.0	344.2	5.03	-7.0	23.9	64.0	40.9	65.0	278.4	7.9	556.0	419.0	9.3

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

8.2 Loch Grannoch - epilithic diatom data

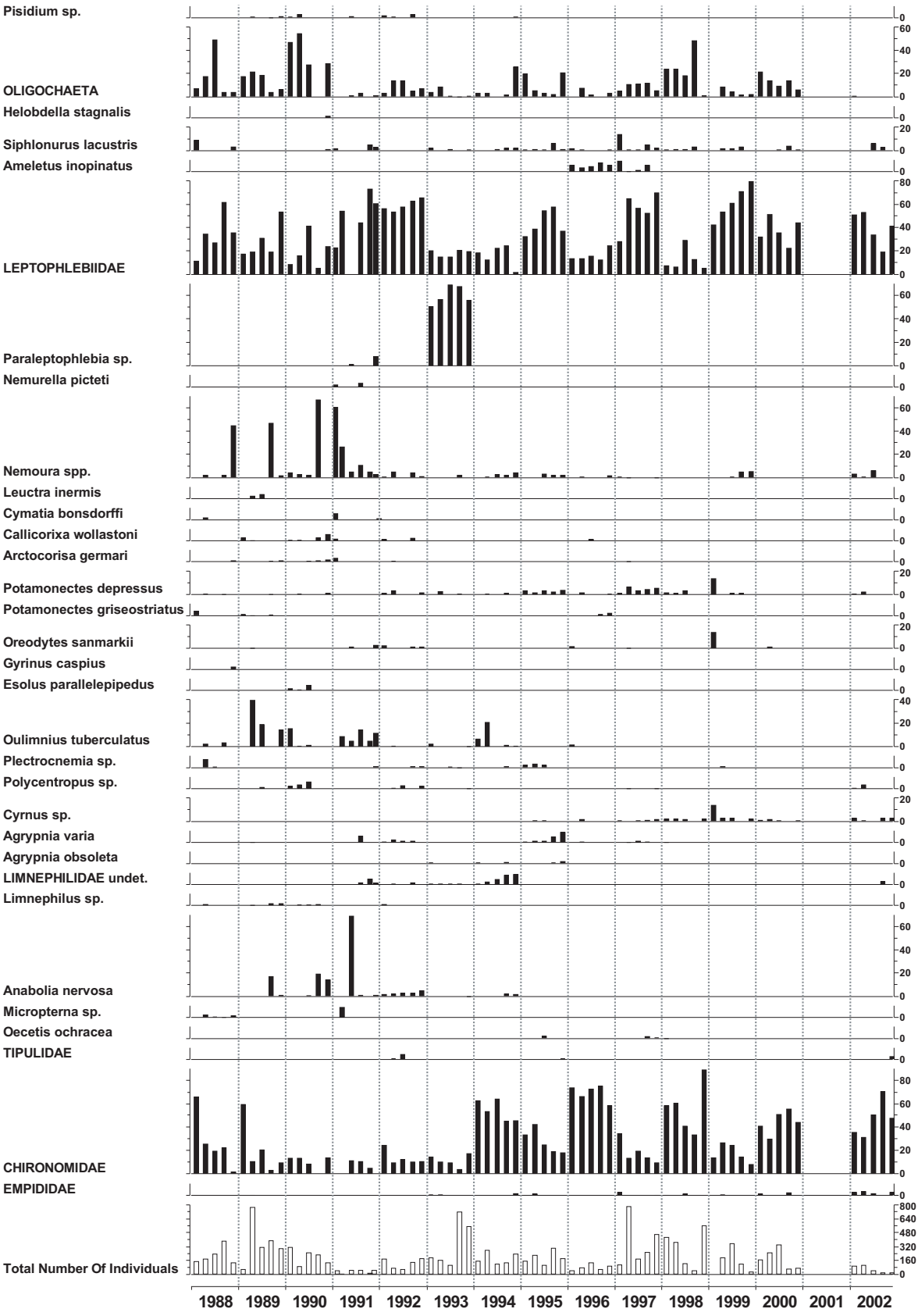
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



8.3 Loch Grannoch - macroinvertebrate data

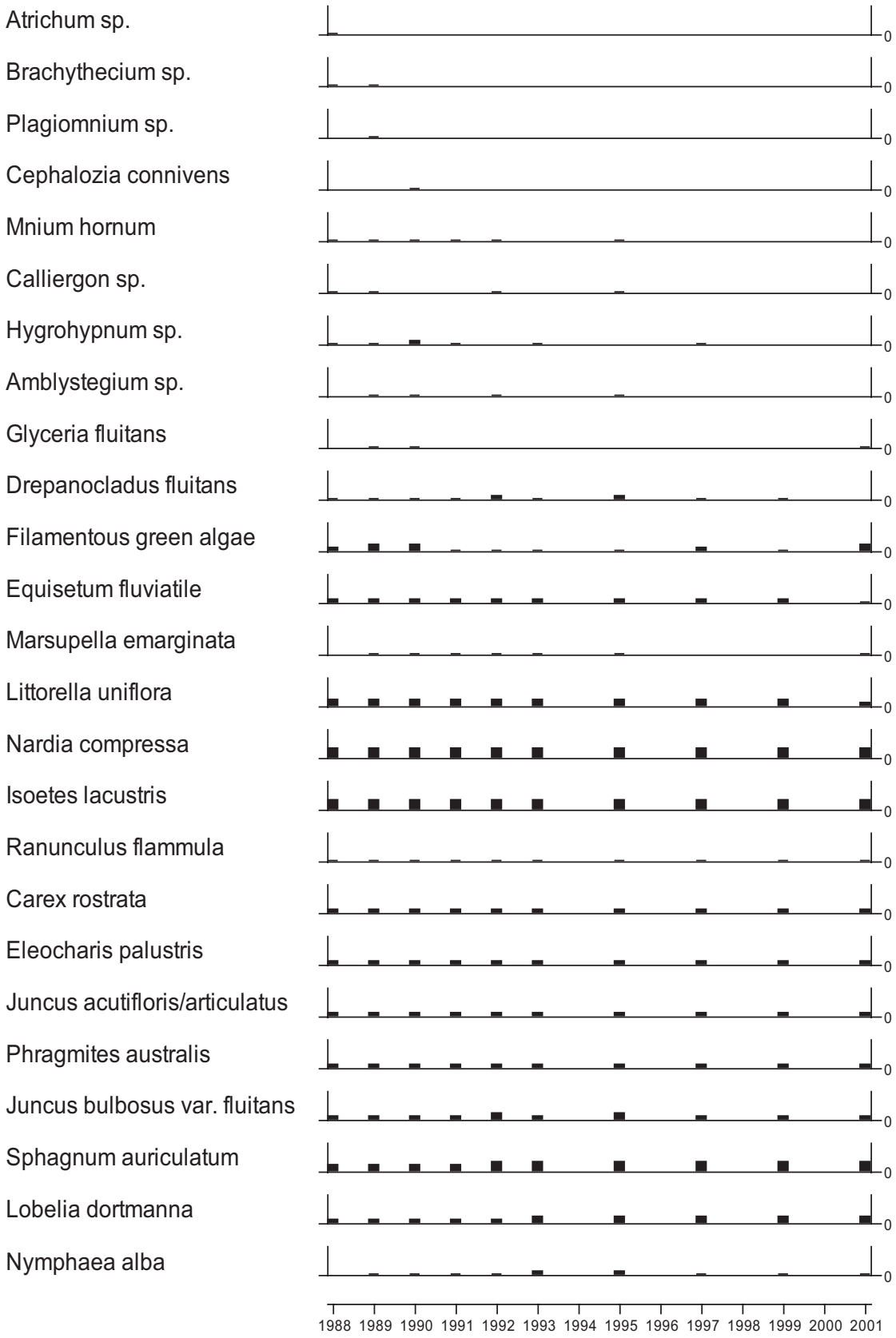
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

no data for 2001



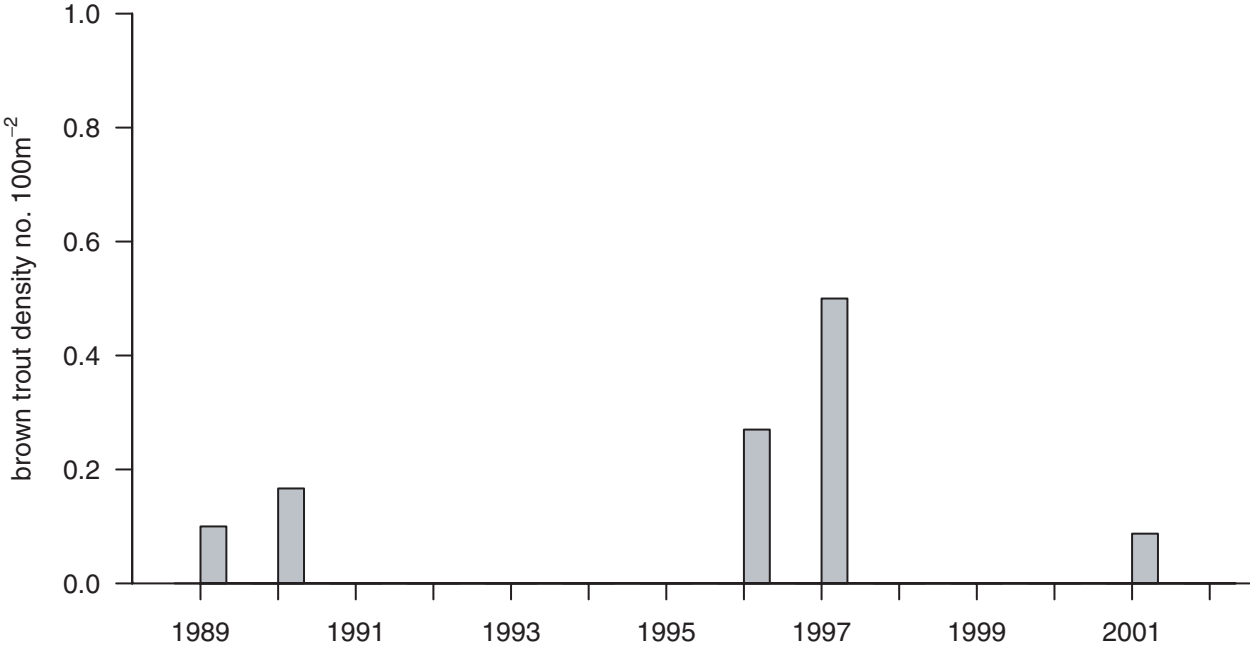
8.4 Loch Grannoch - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



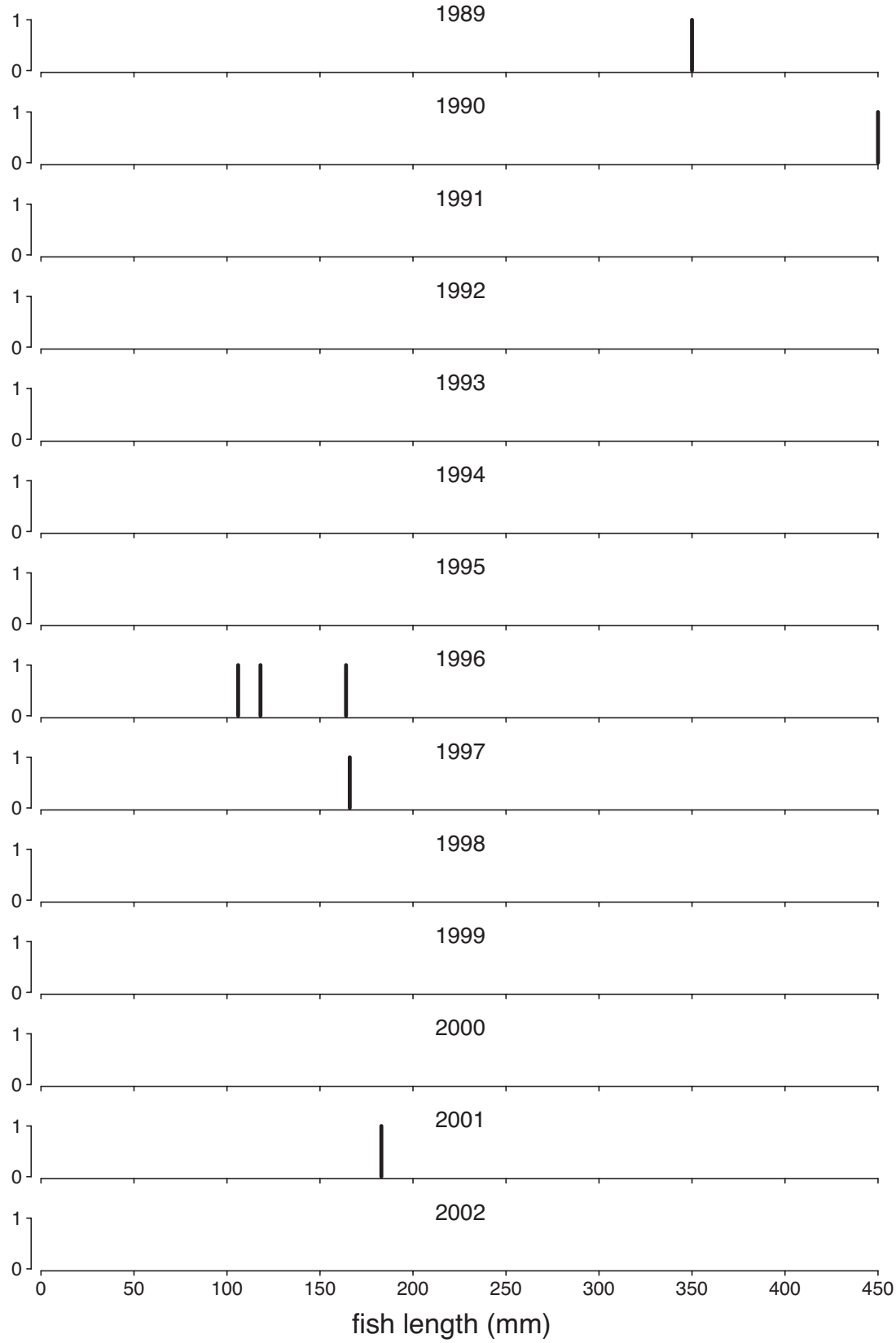
8.5a Loch Grannoch - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



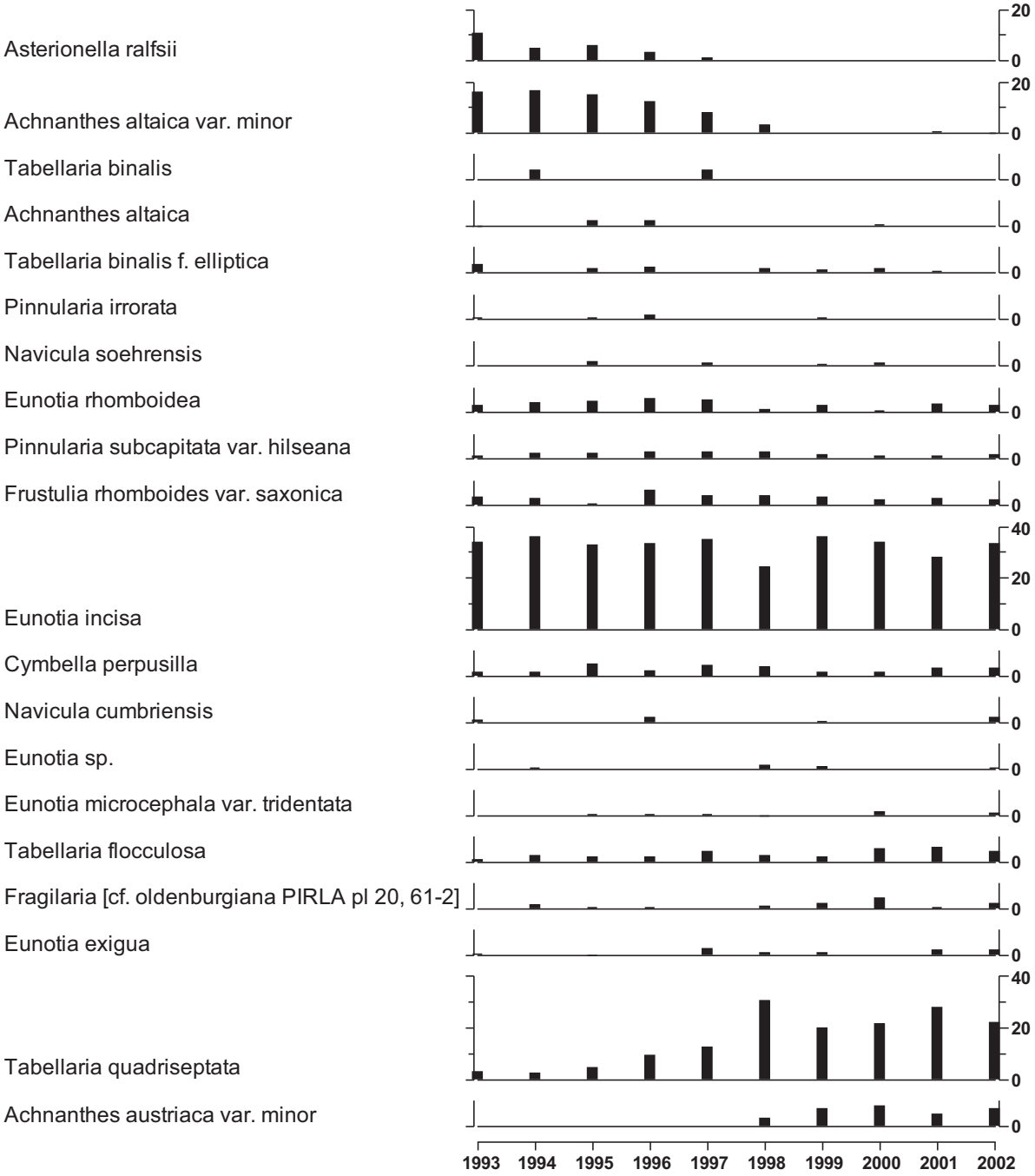
8.5b Loch Grannoch - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



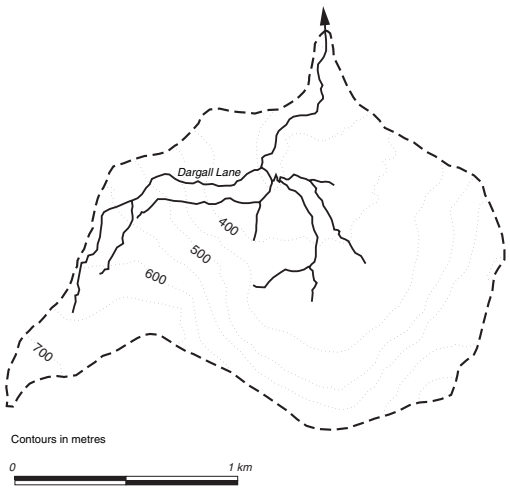
8.6 Loch Grannoch - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

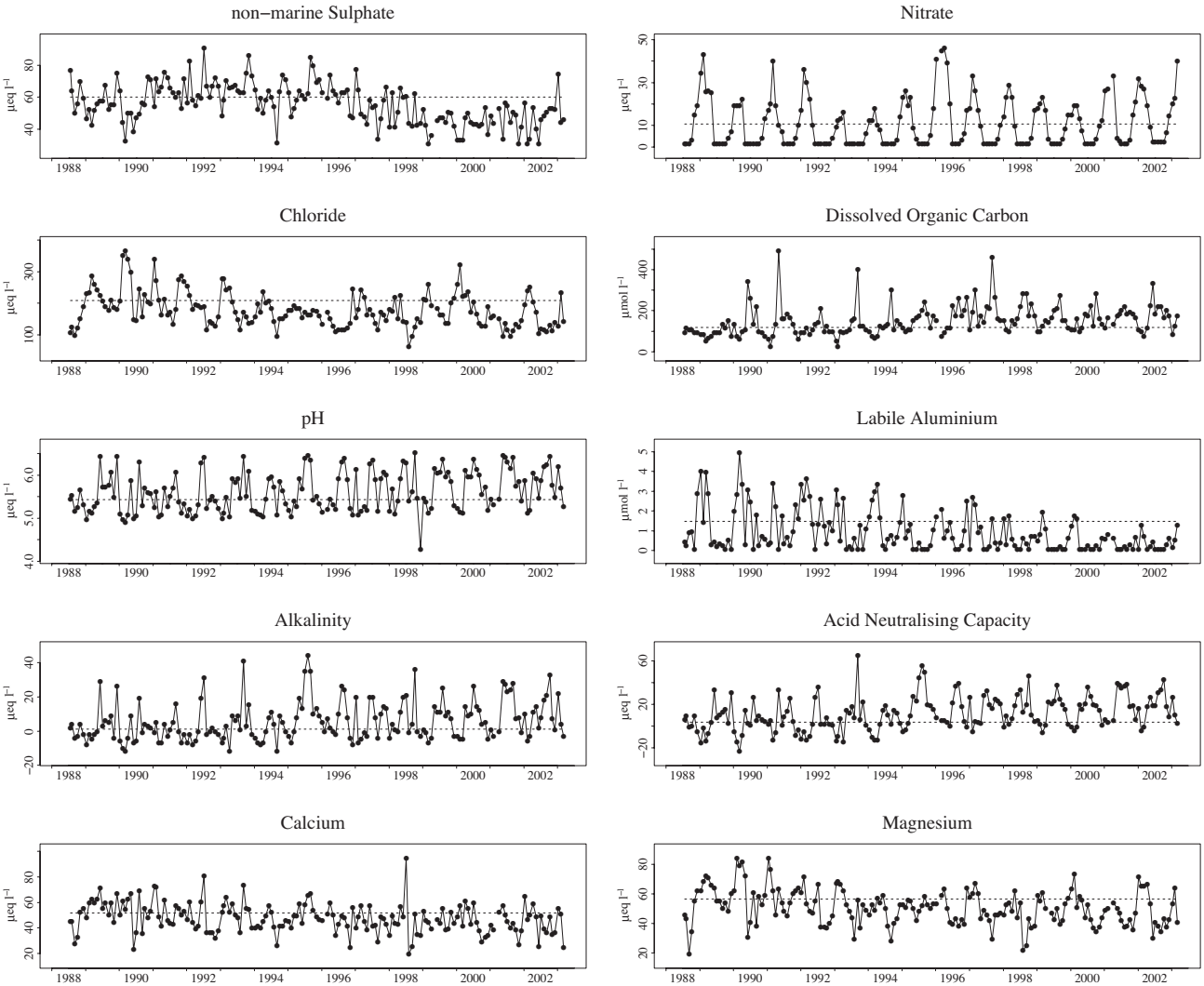


Site 9: Dargall Lane

Grid reference:
NX 449786



9.1a Time series for key chemical determinands



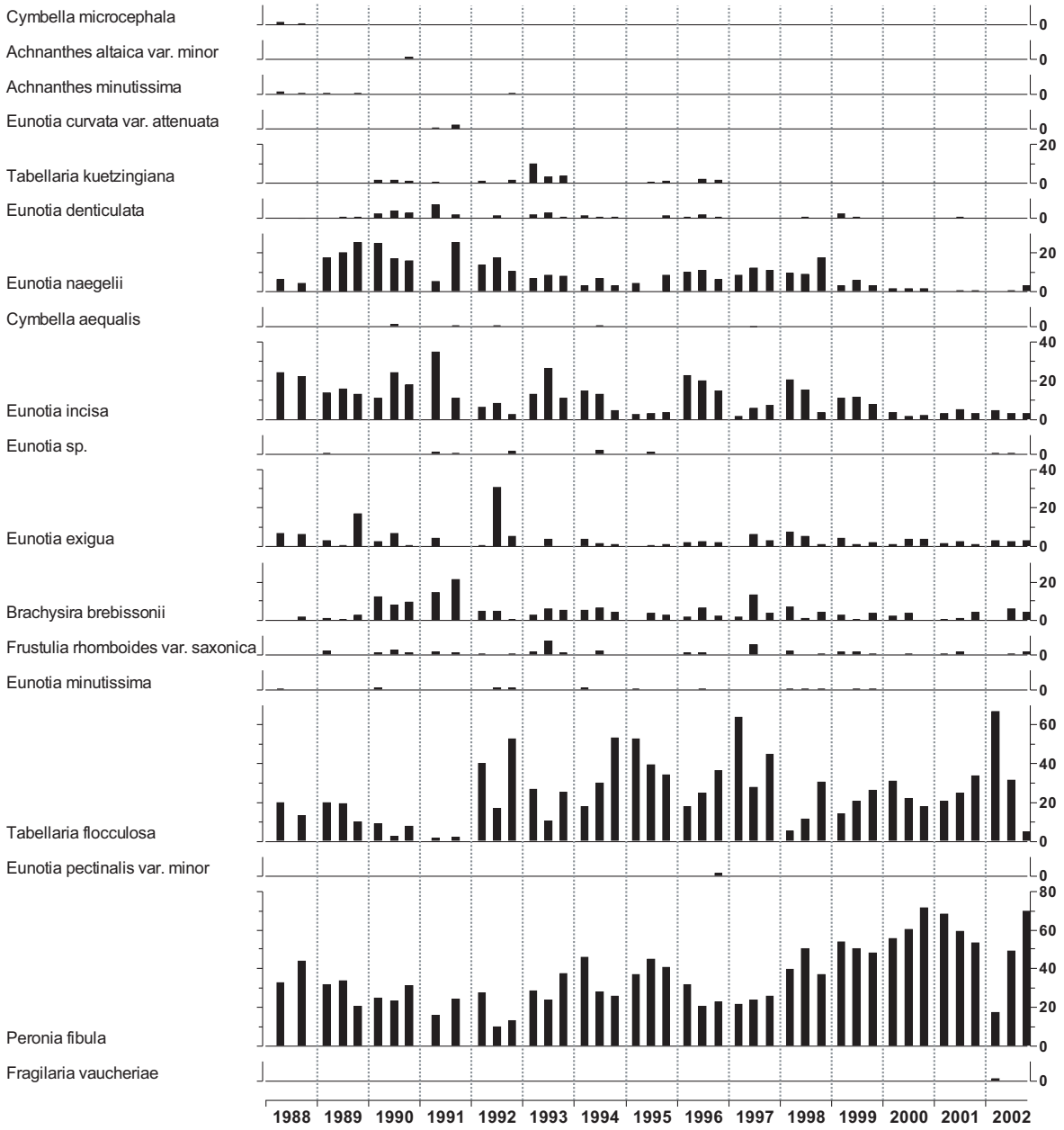
9.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Jul 1988	mean	60.3	10.7	208.2	5.44	1.3	3.4	37.8	51.5	55.9	182.3	9.0	55.5	39.9	1.4
- Mar 1993	st. dev	10.9	11.5	63.9	0.41	9.5	13.2	8.4	12.3	13.6	39.8	4.0	41.0	35.1	0.9
	min	32.6	1.3	98.7	4.91	-12.0	-23.6	24.0	23.0	18.9	108.8	2.6	2.0	2.0	0.3
	max	90.7	42.9	366.7	6.44	31.0	35.5	59.0	80.3	83.1	282.8	17.1	143.0	133.0	5.9
Apr 1993	mean	60.4	11.1	165.5	5.60	7.1	13.0	32.9	47.1	48.5	155.4	8.3	43.2	25.3	1.9
- Mar 1998	st. dev	11.1	12.3	34.7	0.45	12.7	16.5	4.7	9.3	8.4	21.0	3.1	30.2	24.8	0.9
	min	31.7	1.3	95.9	5.03	-12.0	-14.9	21.0	25.0	28.0	91.4	2.6	2.0	2.0	0.8
	max	85.9	46.0	248.2	6.45	44.0	64.8	44.0	72.9	66.6	195.8	13.6	116.0	91.0	5.5
Apr 1998	mean	46.3	10.9	163.8	5.77	9.3	17.3	30.8	44.7	47.0	149.7	8.2	28.1	11.2	2.0
- Mar 2003	st. dev	9.1	10.4	51.7	0.47	11.2	13.5	7.0	12.0	11.0	31.9	3.3	19.3	12.5	0.7
	min	30.8	1.3	62.1	4.28	-7.0	-6.0	16.0	19.5	21.4	74.0	2.0	2.0	2.0	0.9
	max	74.2	40.0	321.6	6.51	36.0	46.3	50.0	94.3	72.4	252.3	15.3	75.0	52.0	4.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

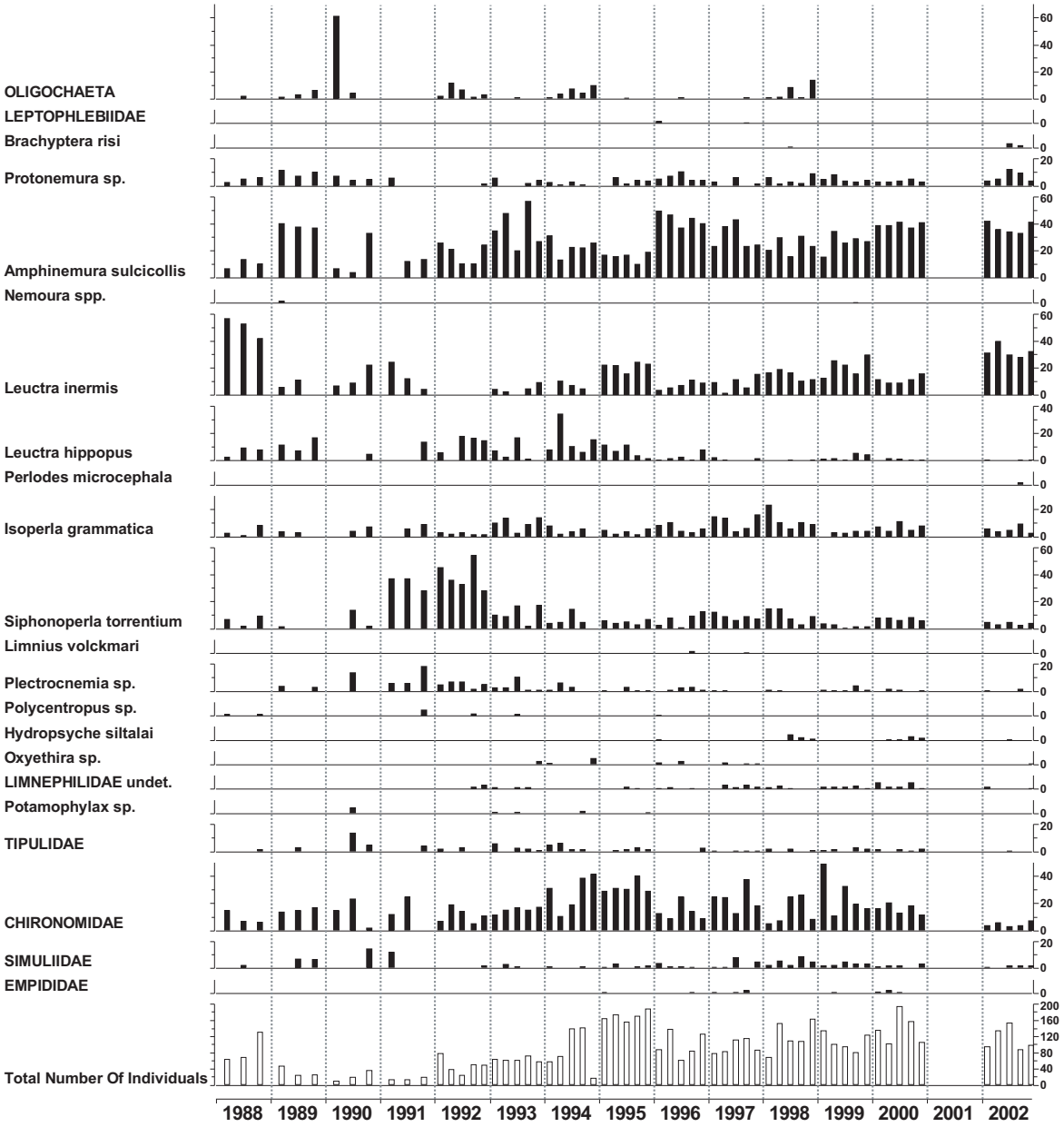
9.2 Dargall Lane - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



9.3 Dargall Lane - macroinvertebrate data

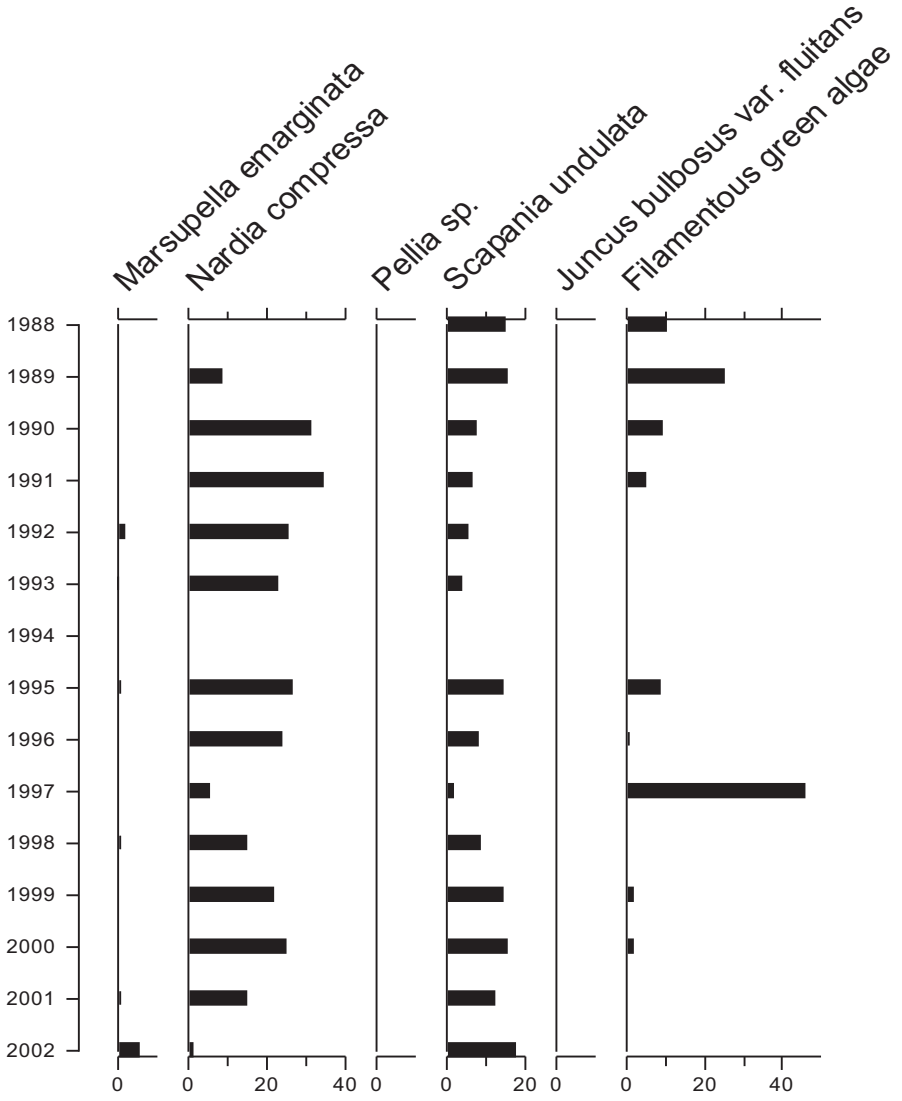
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



9.4 Dargall Lane - aquatic macrophyte data

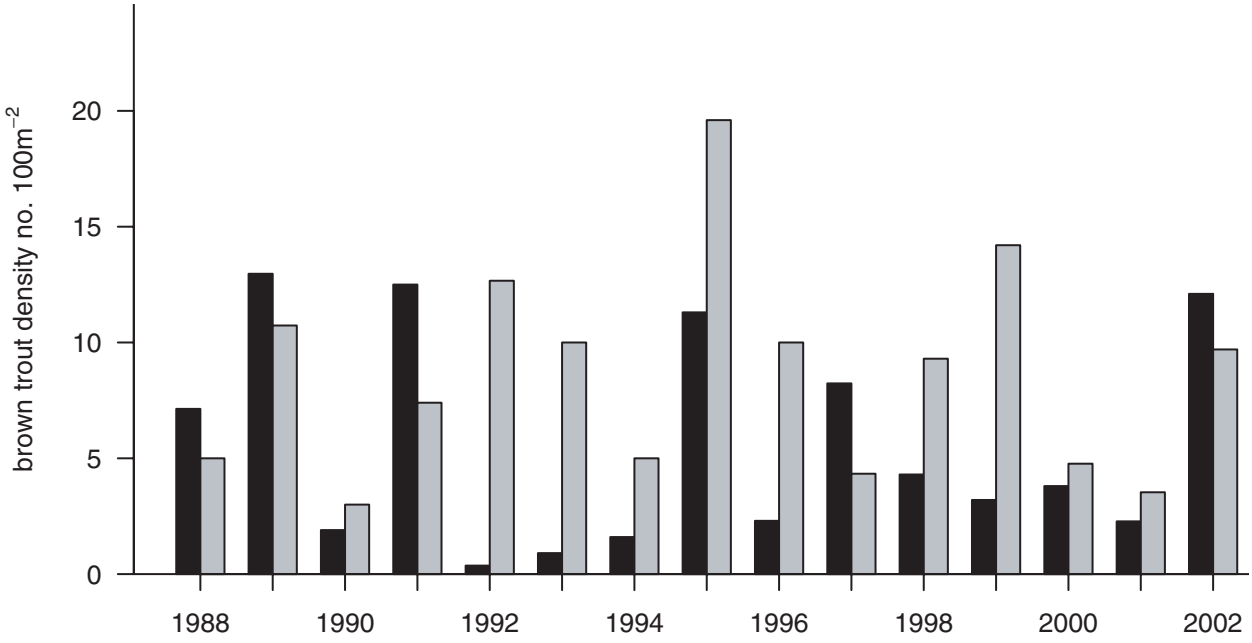
percentage cover estimates for 50 m survery stretch

no data for 1994



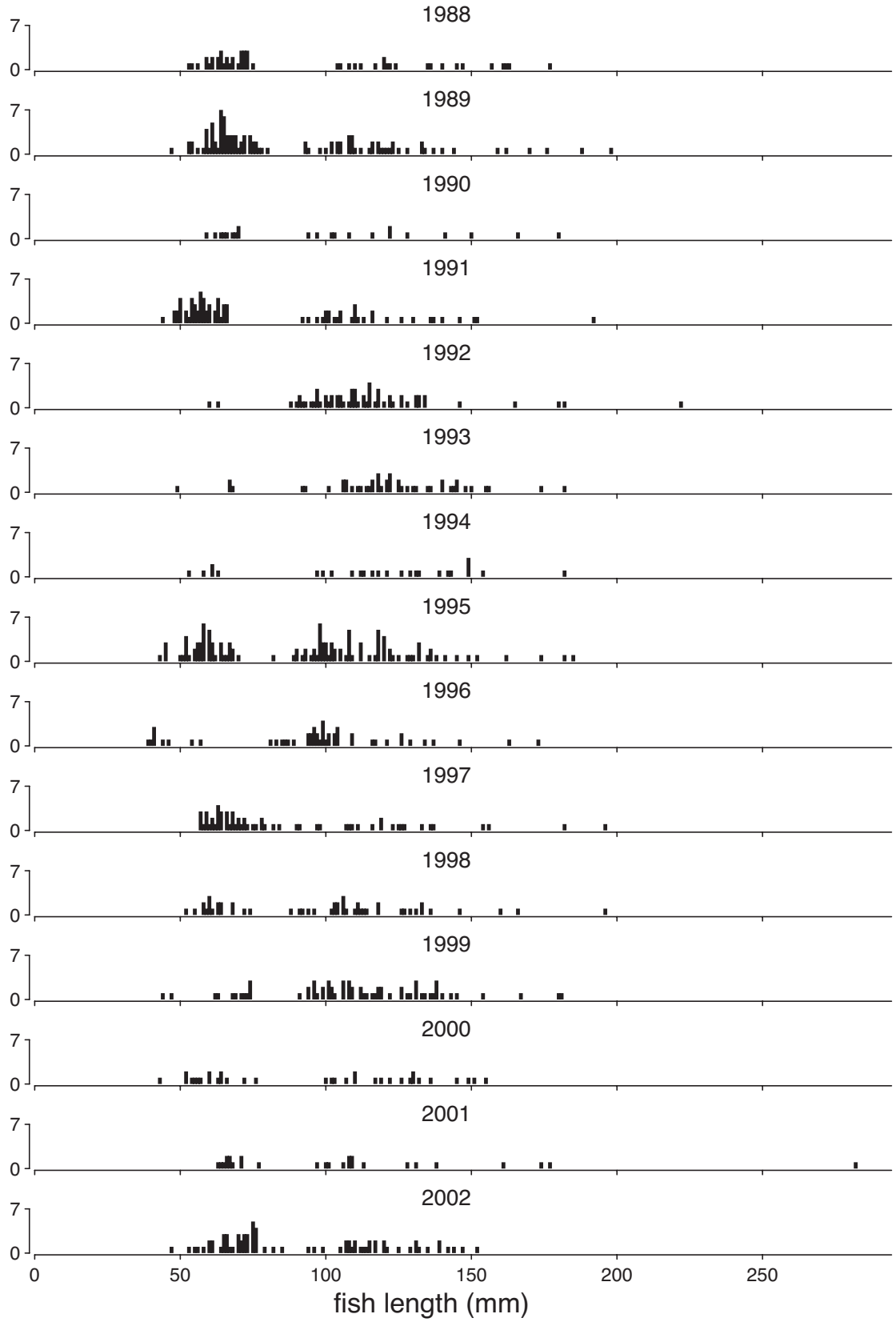
9.5a Dargall Lane - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).0



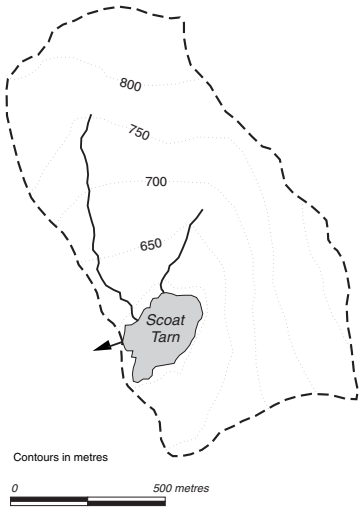
9.5b Dargall Lane - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

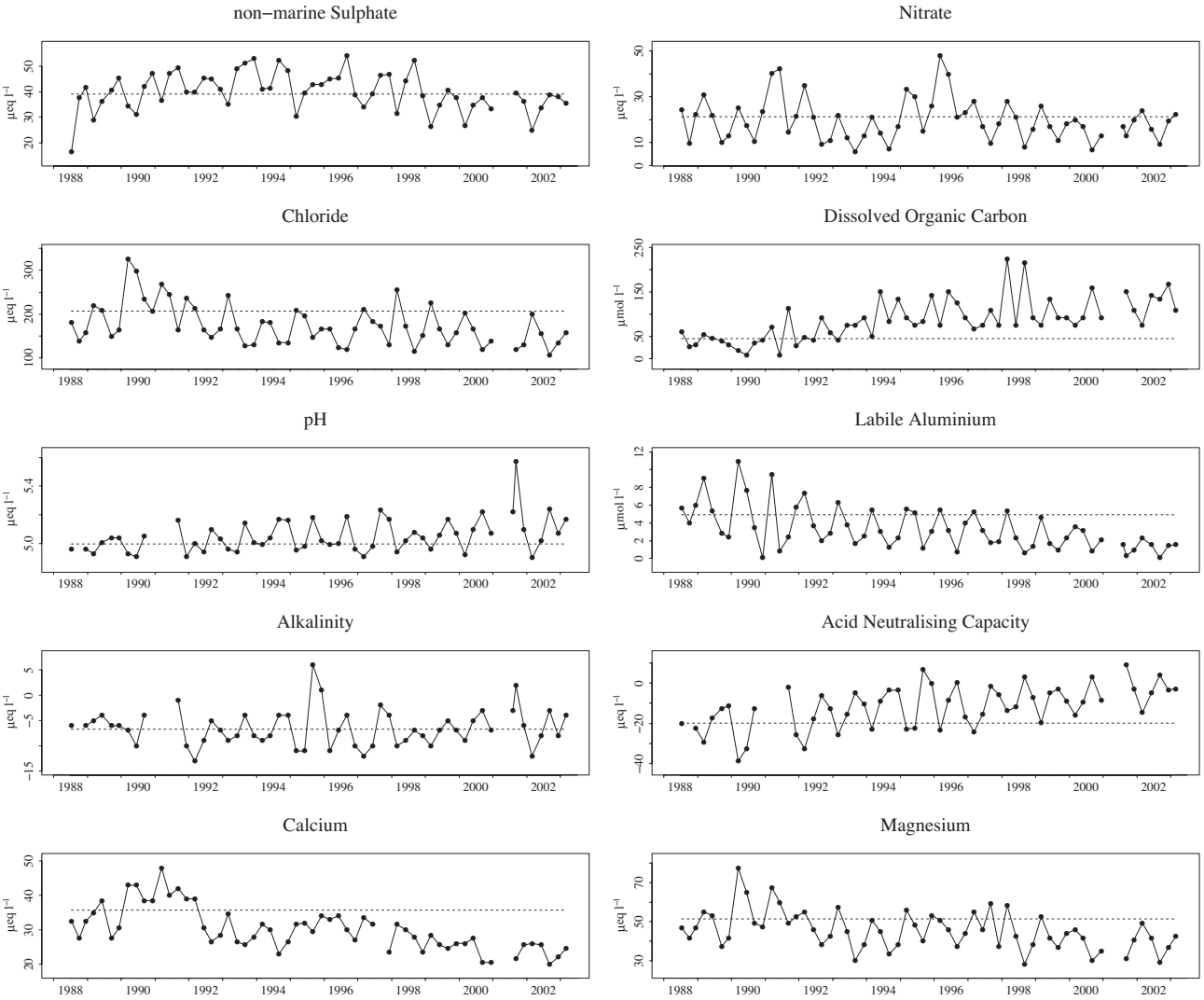


Site 10: Scoat Tarn

Grid reference:
NY 159104



10.1a Time series for key chemical determinands



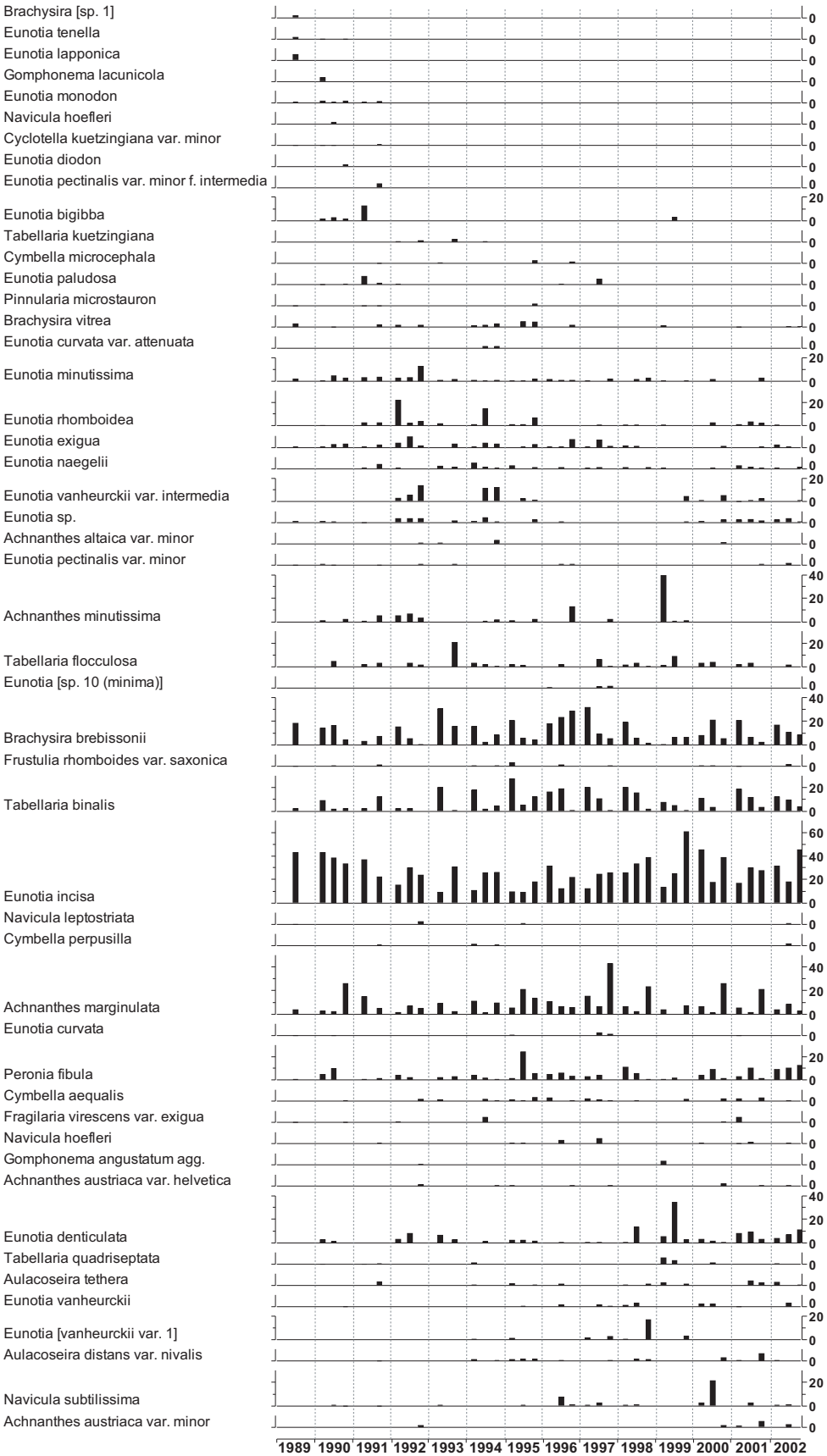
10.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988 - Mar 1993	mean	39.2	21.2	206.6	5.00	-6.8	-20.0	37.6	35.7	50.8	178.4	8.2	144.7	132.5	0.5
	st. dev	7.6	10.0	53.0	0.07	2.9	10.3	6.4	6.1	10.1	39.1	2.3	79.7	79.6	0.3
	min	16.6	9.0	138.2	4.91	-13.0	-38.7	28.0	26.4	37.0	134.9	2.6	12.2	2.0	0.1
	max	49.6	42.3	327.2	5.16	-1.0	-2.0	49.0	47.9	76.5	265.4	13.0	300.0	293.8	1.4
Apr 1993 - Mar 1998	mean	43.8	21.3	165.3	5.05	-6.5	-10.8	32.5	29.5	45.0	149.9	6.4	98.2	88.8	1.2
	st. dev	6.9	10.9	35.8	0.10	4.6	9.4	5.0	3.4	8.2	18.9	1.7	42.8	44.1	0.5
	min	30.3	6.0	118.5	4.91	-12.0	-24.2	24.0	23.0	29.6	126.2	2.6	32.0	21.0	0.6
	max	54.3	48.0	256.7	5.23	6.0	6.8	41.0	33.9	58.4	187.1	8.9	160.0	150.0	2.7
Apr 1998 - Mar 2003	mean	36.4	16.5	152.8	5.11	-6.3	-5.5	28.9	24.7	38.8	134.6	6.1	57.3	47.2	1.4
	st. dev	6.5	5.3	32.8	0.15	3.2	7.4	4.0	2.9	6.7	23.7	1.3	31.2	30.4	0.5
	min	25.0	6.8	107.2	4.90	-12.0	-19.7	23.0	20.0	28.0	95.7	4.1	13.0	2.0	0.9
	max	52.5	26.0	225.7	5.57	2.0	9.1	37.0	29.9	51.8	178.4	7.7	134.0	124.0	2.6

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

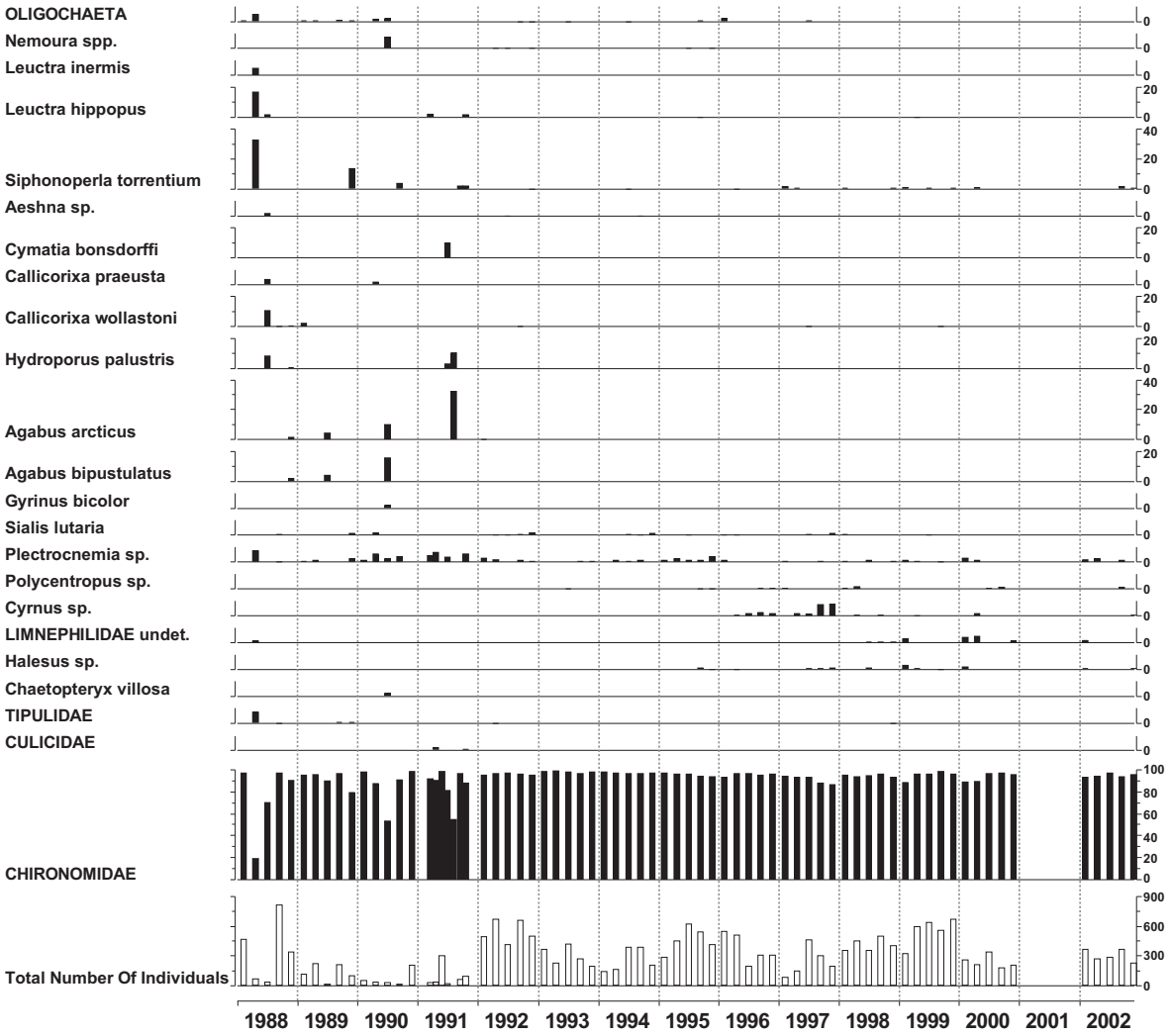
10.2 Scoat Tarn - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



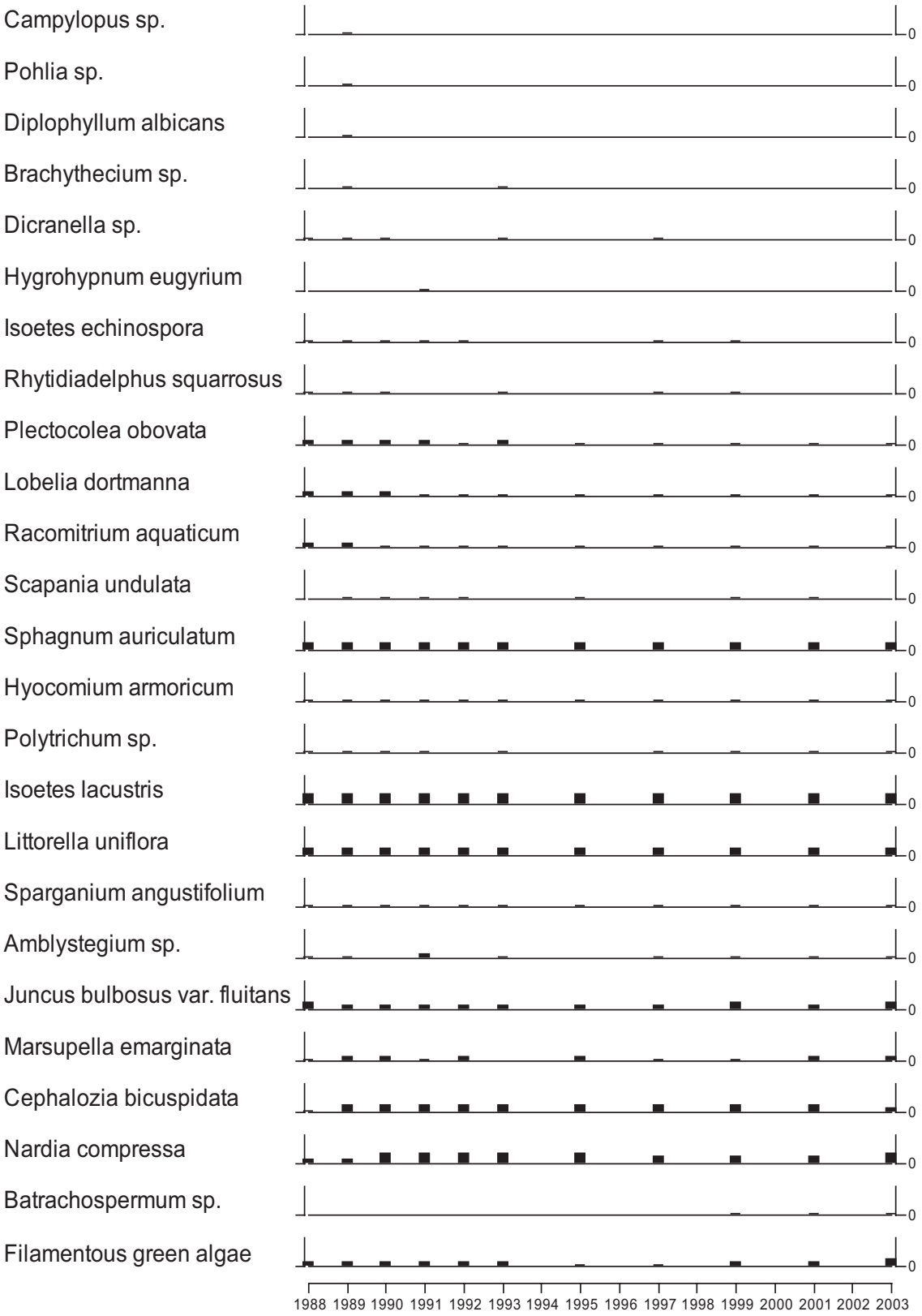
10.3 Scoat Tarn - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



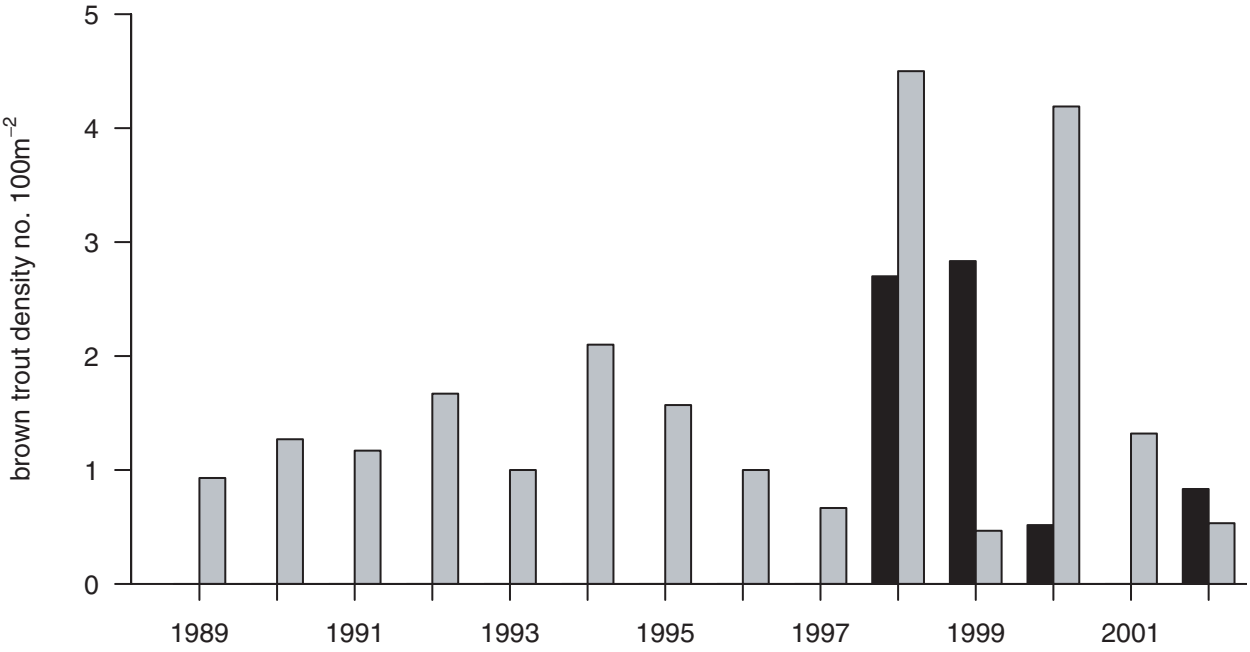
10.4 Scoat Tarn - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



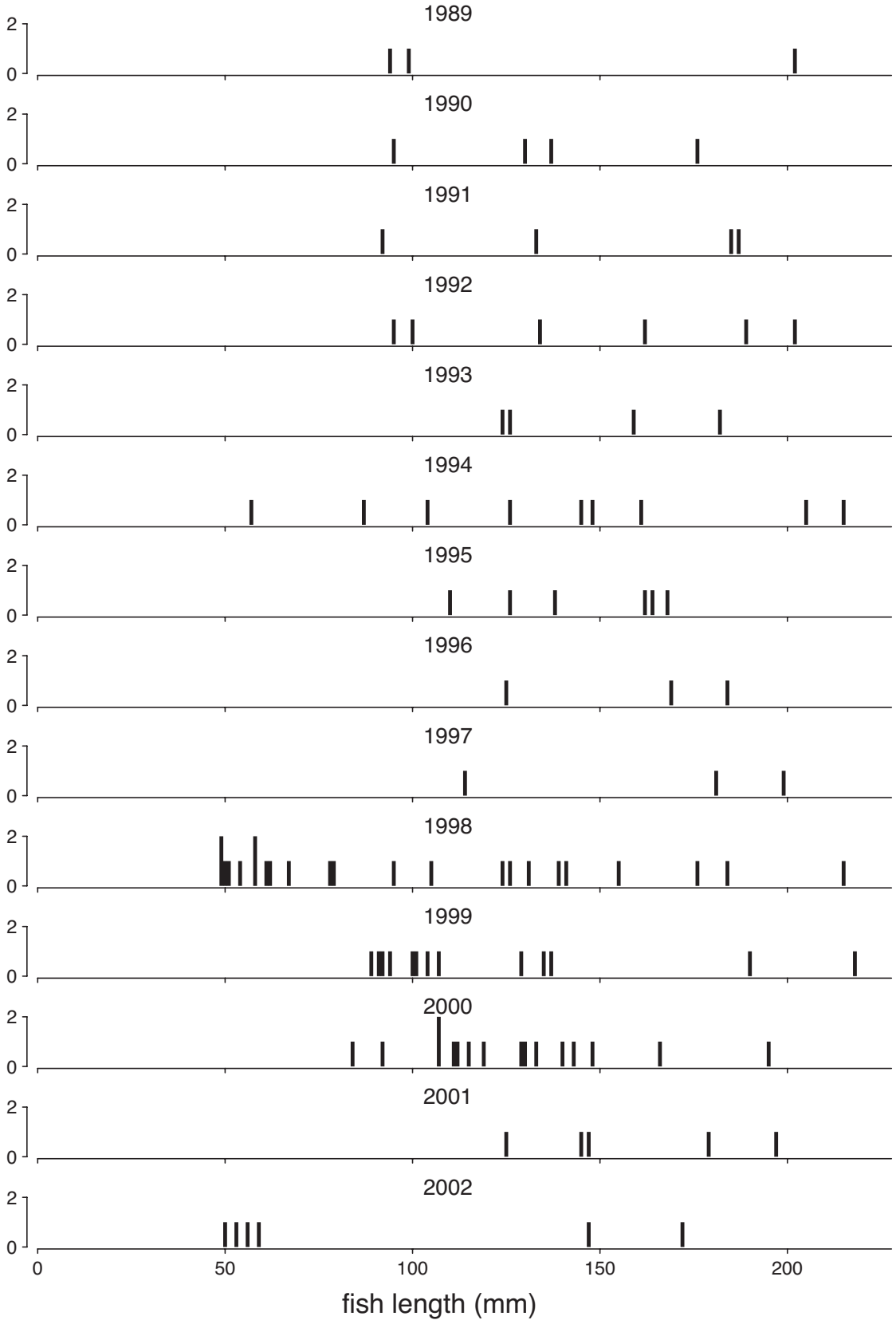
10.5a Scoat Tarn - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



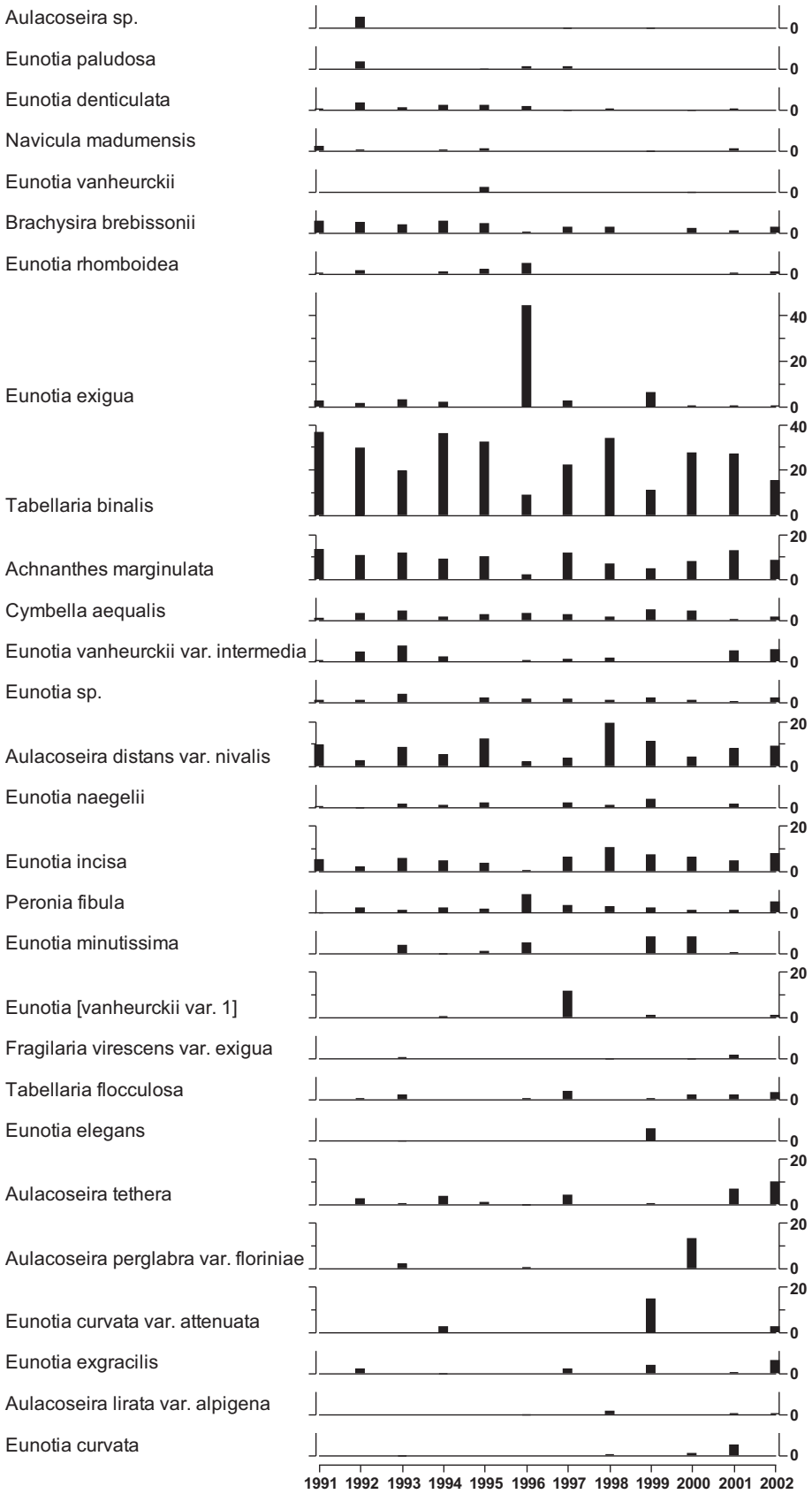
10.5b Scoat Tarn - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



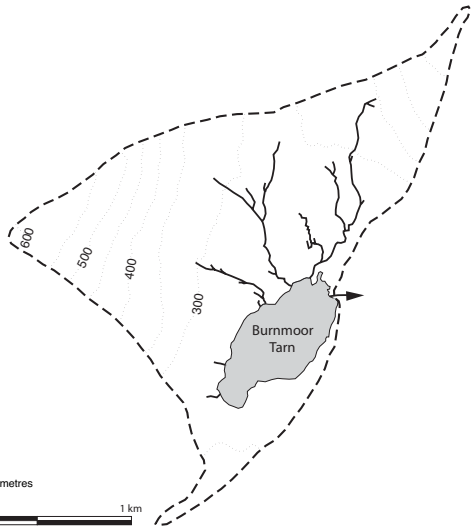
10.6 Scoat Tarn - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

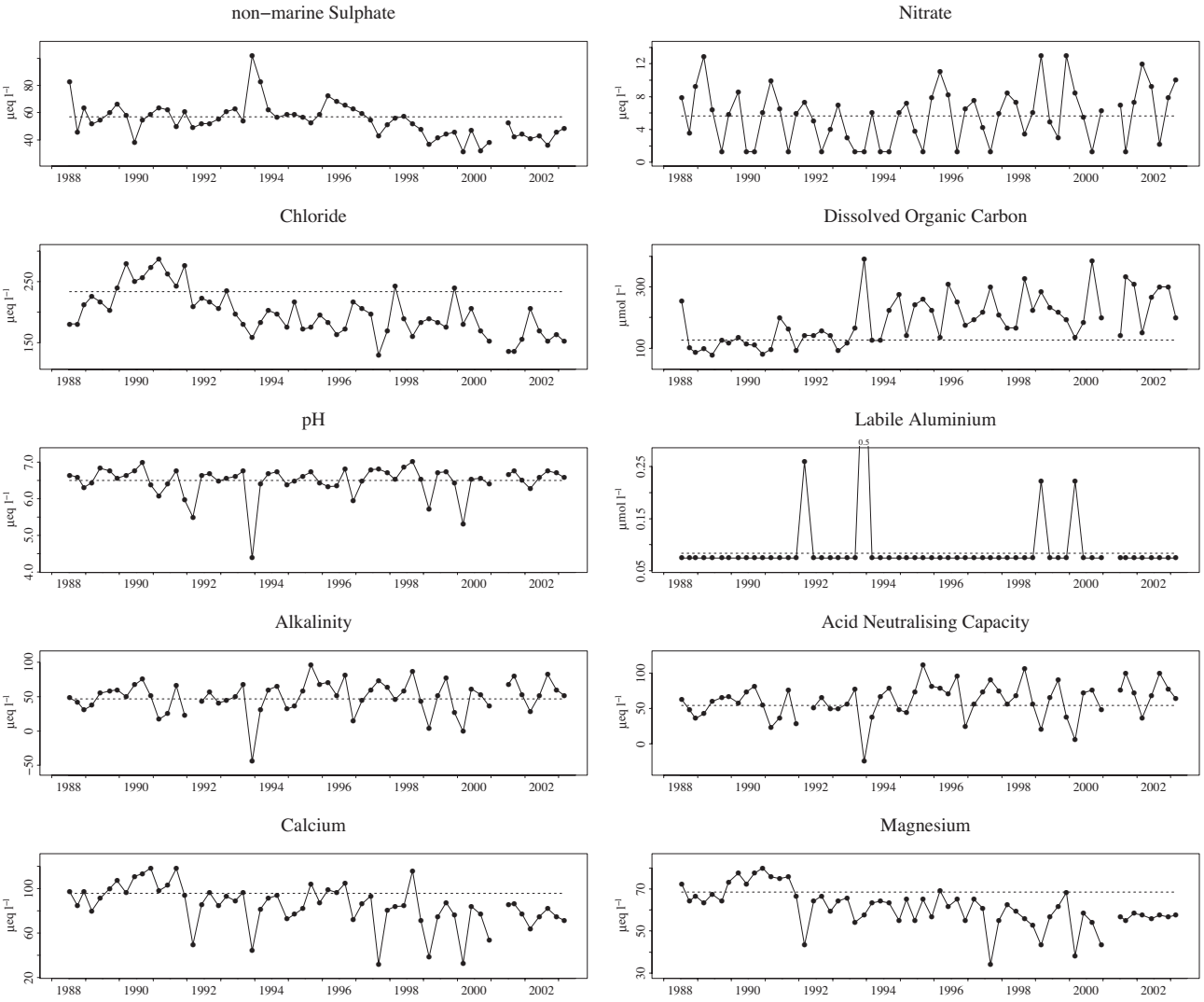


Site 11: Burnmoor Tarn

Grid reference:
NY 184044



11.1a Time series for key chemical determinands



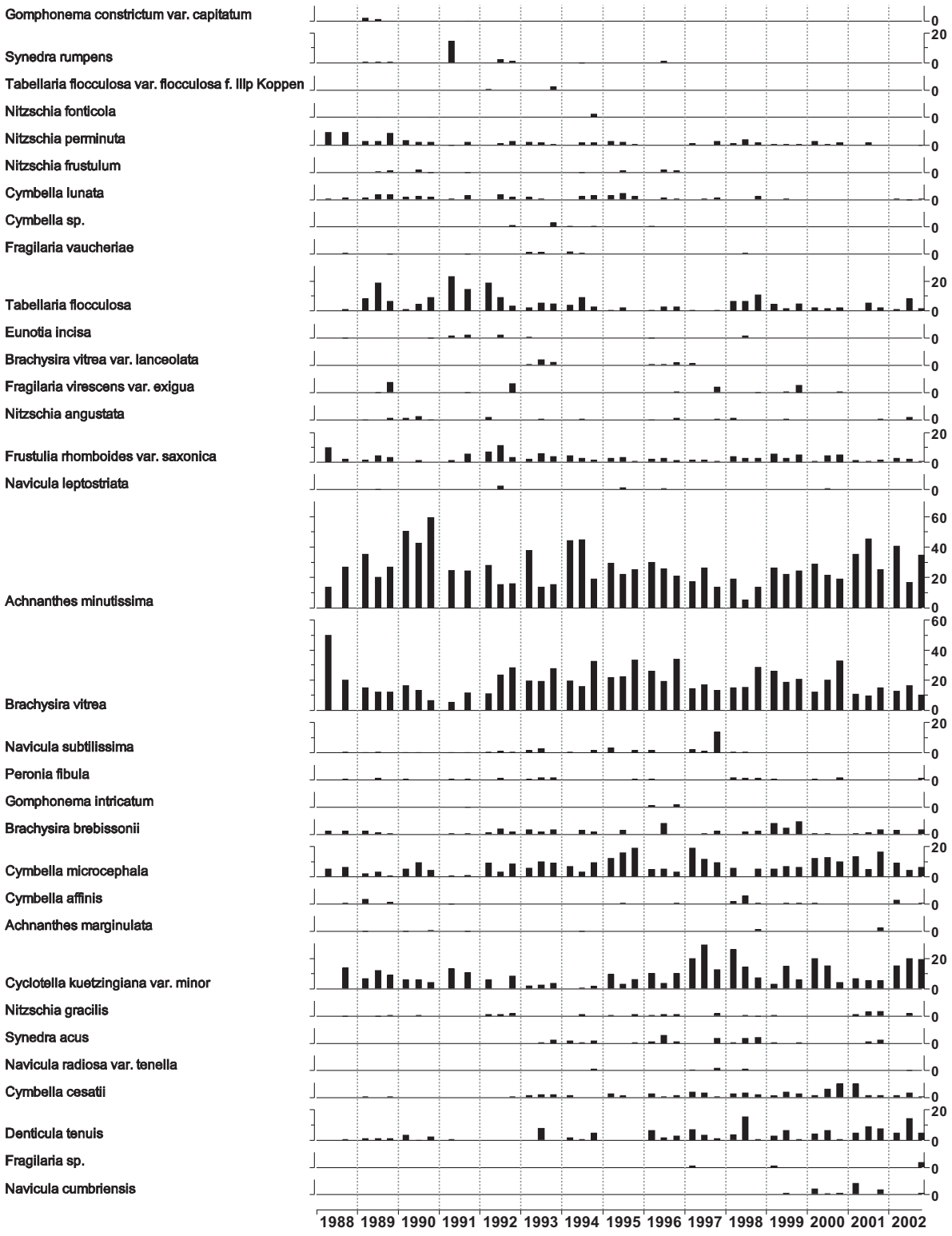
11.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988 - Mar 1993	mean	57.1	5.6	233.9	6.50	46.8	54.1	44.5	95.8	67.6	208.6	9.2	7.6	2.3	1.5
	st. dev	9.2	3.3	31.9	0.34	15.6	16.0	5.2	15.4	8.3	20.7	2.9	9.1	1.1	0.5
	min	38.4	1.3	180.5	5.50	17.0	22.6	37.3	49.4	42.8	169.7	2.6	2.0	2.0	0.9
	max	83.2	12.9	287.7	6.99	75.0	81.4	53.9	118.3	79.0	243.6	15.3	42.0	7.0	3.1
Apr 1993 - Mar 1998	mean	62.0	4.7	186.8	6.45	51.2	63.5	38.8	83.3	58.9	176.0	6.8	7.7	2.6	2.5
	st. dev	12.7	3.1	24.8	0.53	29.4	29.1	4.9	18.2	7.5	17.4	2.2	6.9	2.7	0.9
	min	42.7	1.3	129.8	4.38	-44.0	-24.4	23.0	31.9	33.7	126.2	2.6	2.0	2.0	1.4
	max	102.2	11.0	242.6	6.81	96.0	111.3	48.0	104.8	68.3	208.8	10.2	27.0	14.0	4.7
Apr 1998 - Mar 2003	mean	43.5	6.8	173.6	6.51	51.1	65.1	35.6	74.3	54.4	160.0	7.1	8.4	2.4	2.9
	st. dev	6.8	3.6	25.9	0.40	24.3	26.5	3.7	18.3	6.8	20.3	1.2	7.6	1.3	0.9
	min	31.2	1.3	135.4	5.30	-1.0	5.5	30.0	32.4	37.8	121.8	4.9	2.0	2.0	1.6
	max	57.4	13.0	239.8	7.01	87.0	106.3	43.0	115.8	67.5	213.2	8.9	33.0	6.0	4.6

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

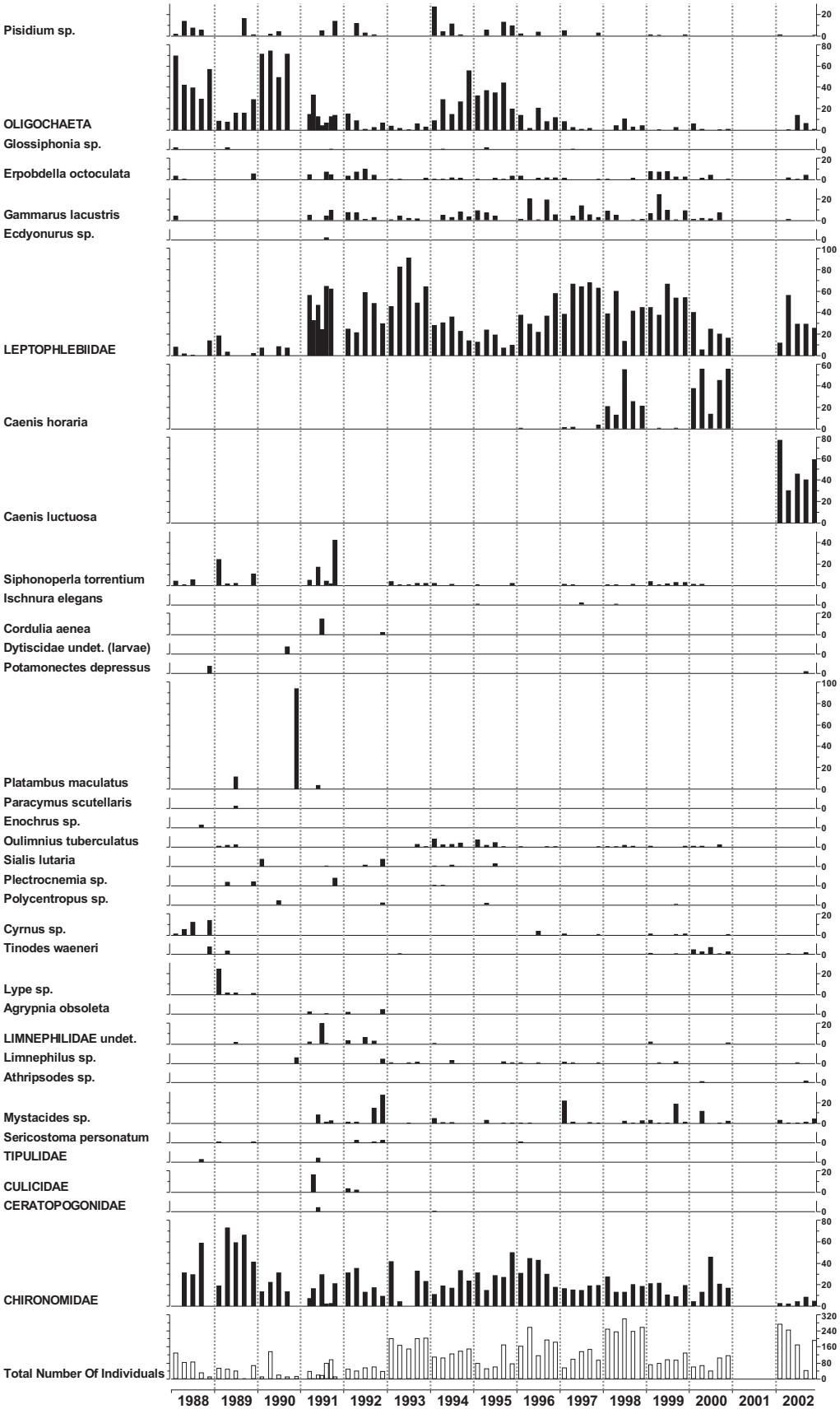
11.2 Burnmoor Tarn - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



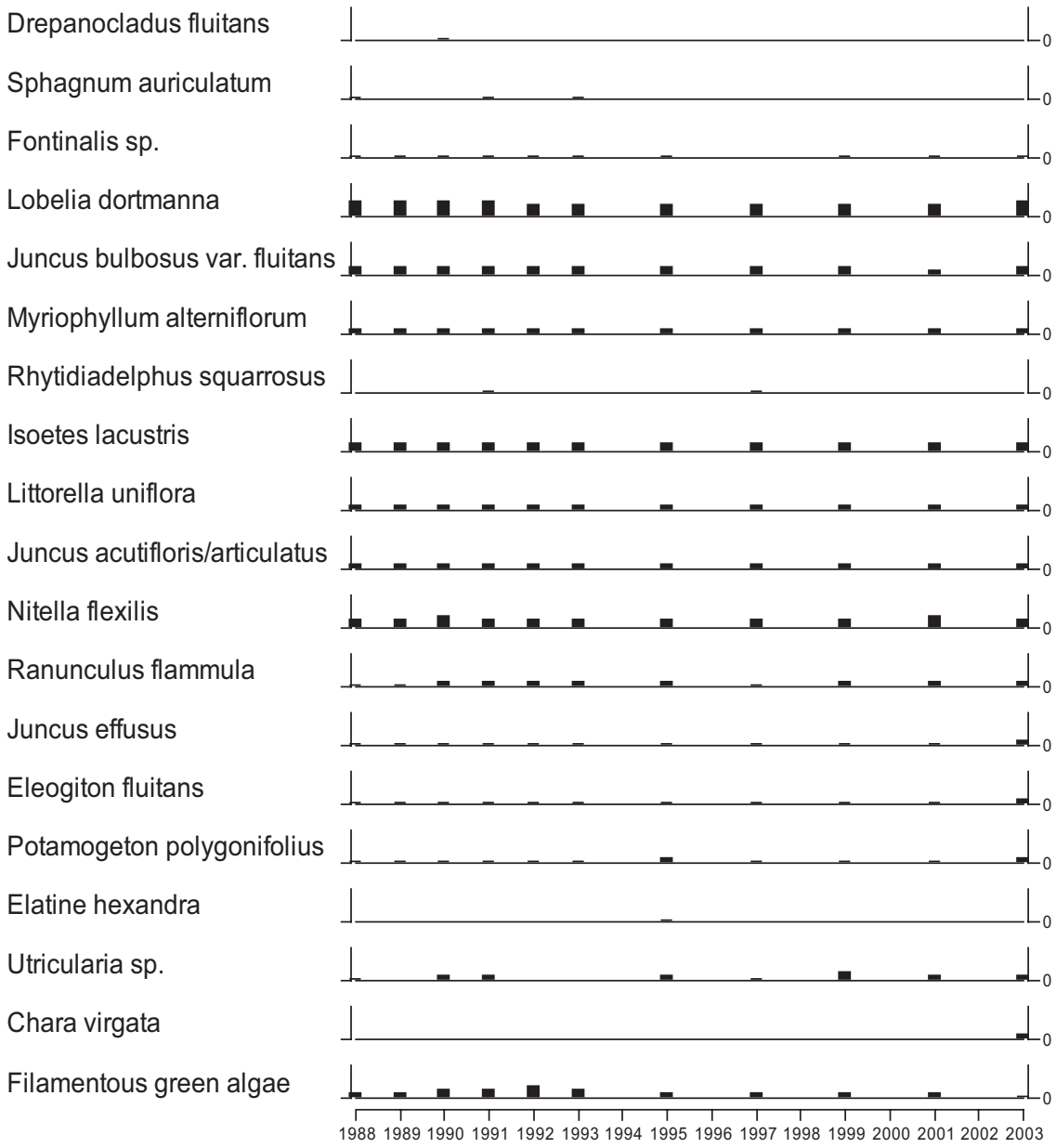
11.3 Burnmoor Tarn - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



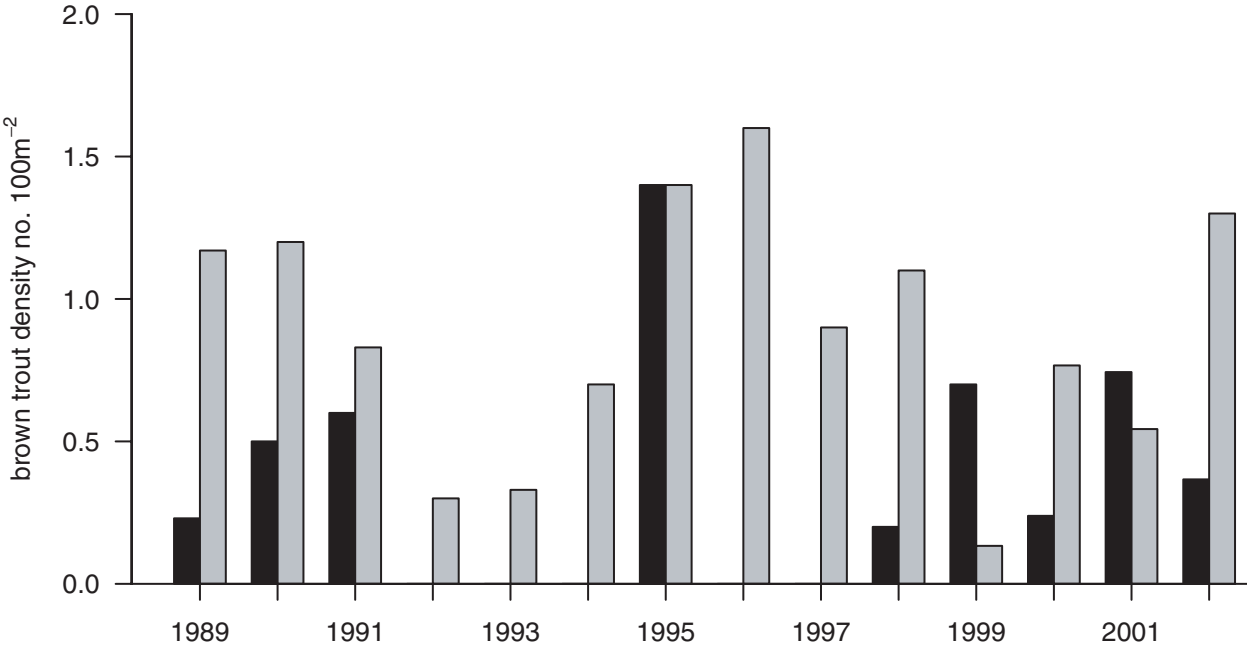
11.4 Burnmoor Tarn - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



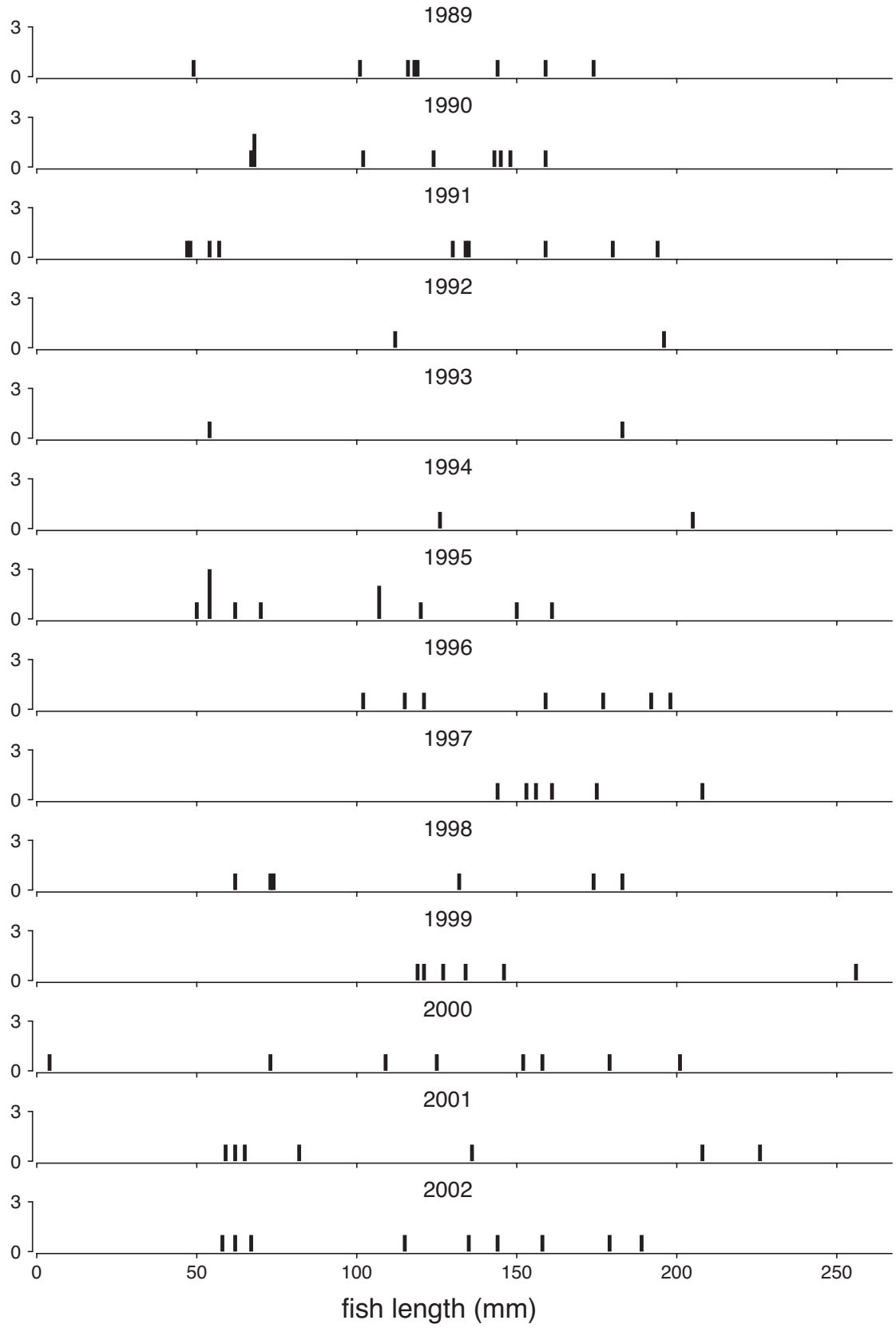
11.5a Burnmoor Tarn - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



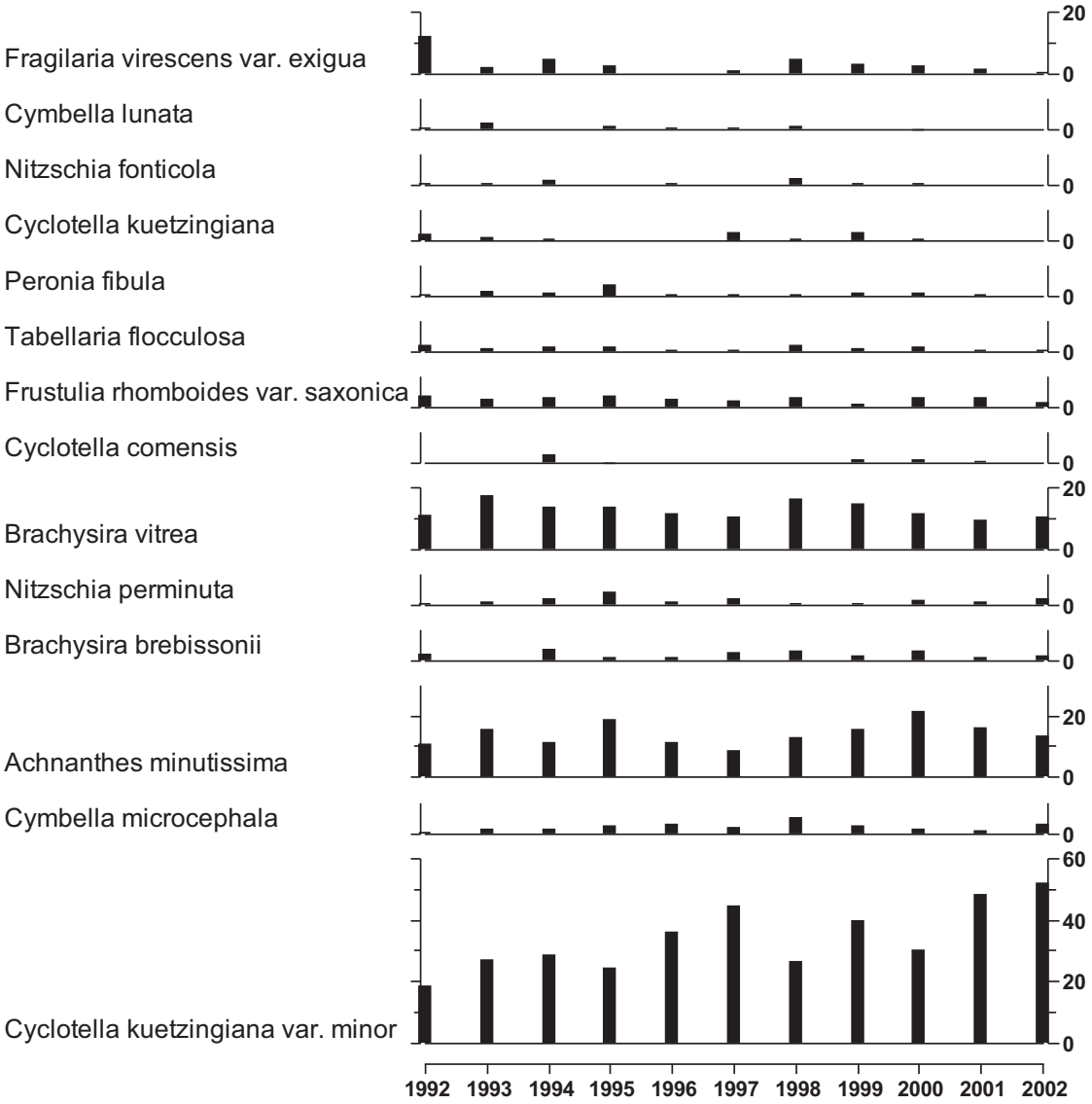
11.5b Burnmoor Tarn - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



11.6 Burnmoor Tarn - sediment trap diatom data

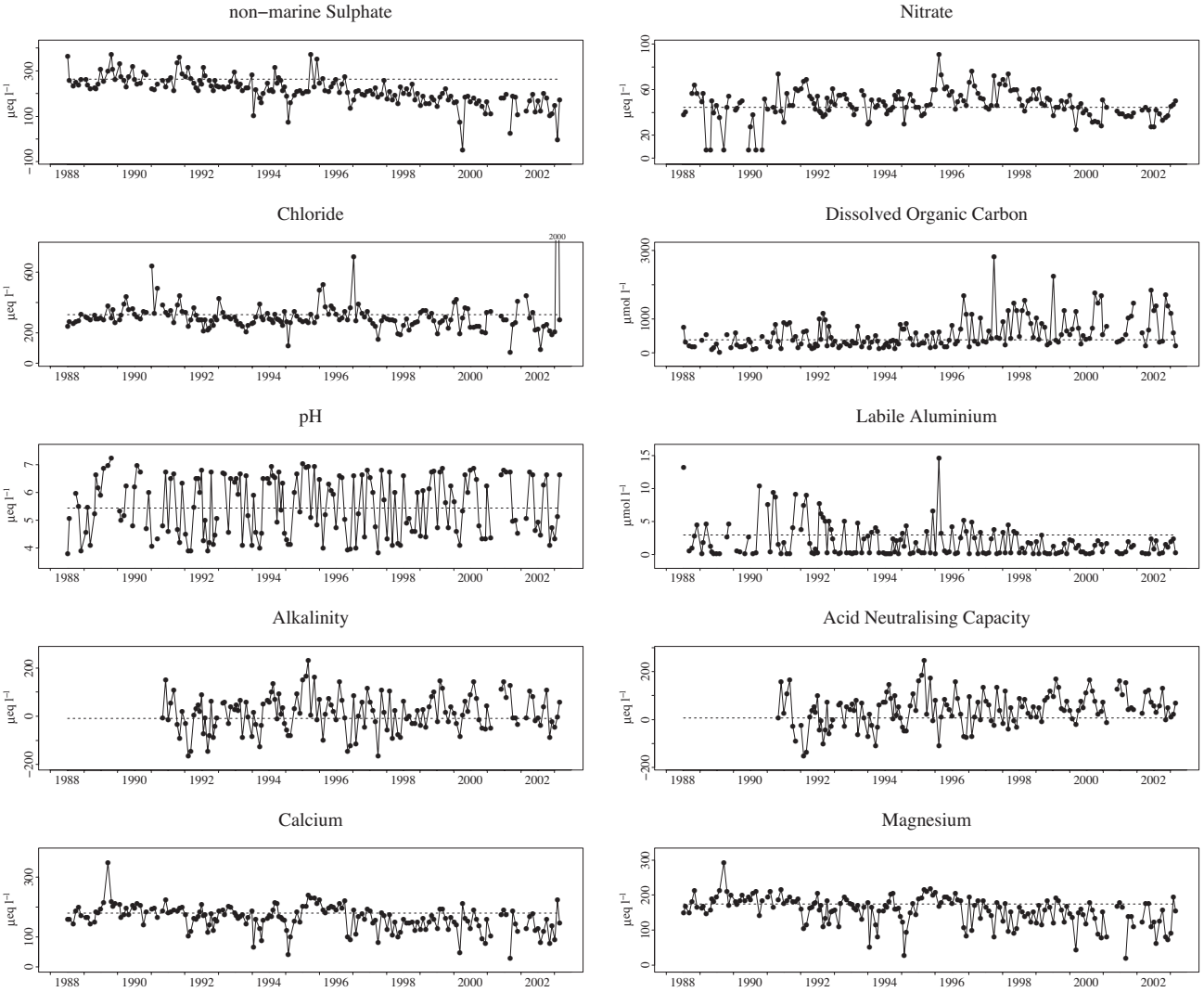
Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%



Site 12: River Etherow

Grid reference:
SK 116996

12.1a Time series for key chemical determinands



12.1b Summary data for key chemical determinands

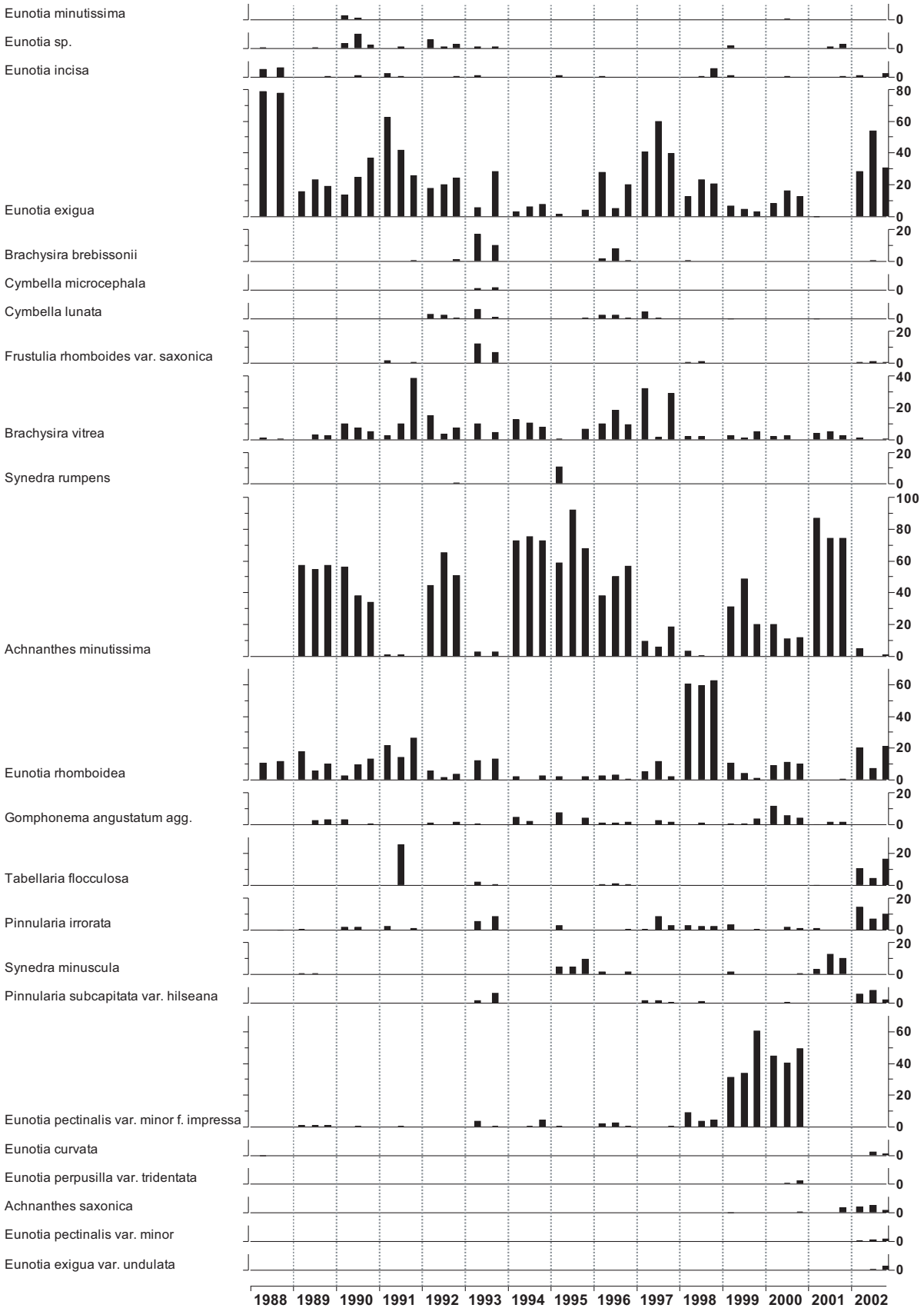
Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988 *	mean	257.7	44.4	319.9	5.43	-8.8	7.5	84.9	179.6	172.6	303.8	19.9	151.7	80.5	4.6
- Mar 1993	st. dev	53.8	16.0	69.5	1.06	79.5	82.0	18.1	34.6	31.0	51.5	3.8	143.4	92.1	3.3
	min	-22.9	7.1	214.4	3.79	-163.0	-151.9	32.8	103.8	102.0	213.2	11.0	2.0	2.0	0.3
	max	372.8	74.3	643.2	7.22	150.0	163.5	137.7	349.3	289.6	526.4	31.2	580.0	356.0	14.1
Apr 1993	mean	219.6	51.9	304.8	5.60	18.4	39.7	85.2	167.2	157.8	304.8	20.1	130.5	50.1	5.8
- Mar 1998	st. dev	47.4	11.5	78.0	1.07	82.1	73.7	16.3	41.8	40.0	82.0	4.9	111.0	65.4	5.2
	min	73.6	30.0	112.8	3.83	-165.0	-109.8	56.0	39.9	28.0	100.1	2.6	7.0	2.0	1.6
	max	370.5	91.0	705.3	7.03	231.0	246.6	161.0	238.5	215.5	648.2	32.2	565.0	394.0	34.0
Apr 1998	mean	162.8	43.6	303.4	5.52	18.8	62.4	80.4	141.3	133.1	300.0	17.0	121.9	26.7	10.1
- Mar 2003	st. dev	44.7	8.8	244.3	0.98	63.6	50.0	41.4	38.1	37.8	199.1	4.4	75.6	25.5	6.1
	min	-0.1	25.0	73.3	4.09	-90.0	-32.2	48.0	28.9	19.7	113.1	4.6	10.0	2.0	2.4
	max	239.8	61.0	2002.9	6.86	147.0	169.3	294.0	224.1	190.0	1666.1	24.5	296.0	96.0	27.0

* Alkalinity and ANC records from May 1991.

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

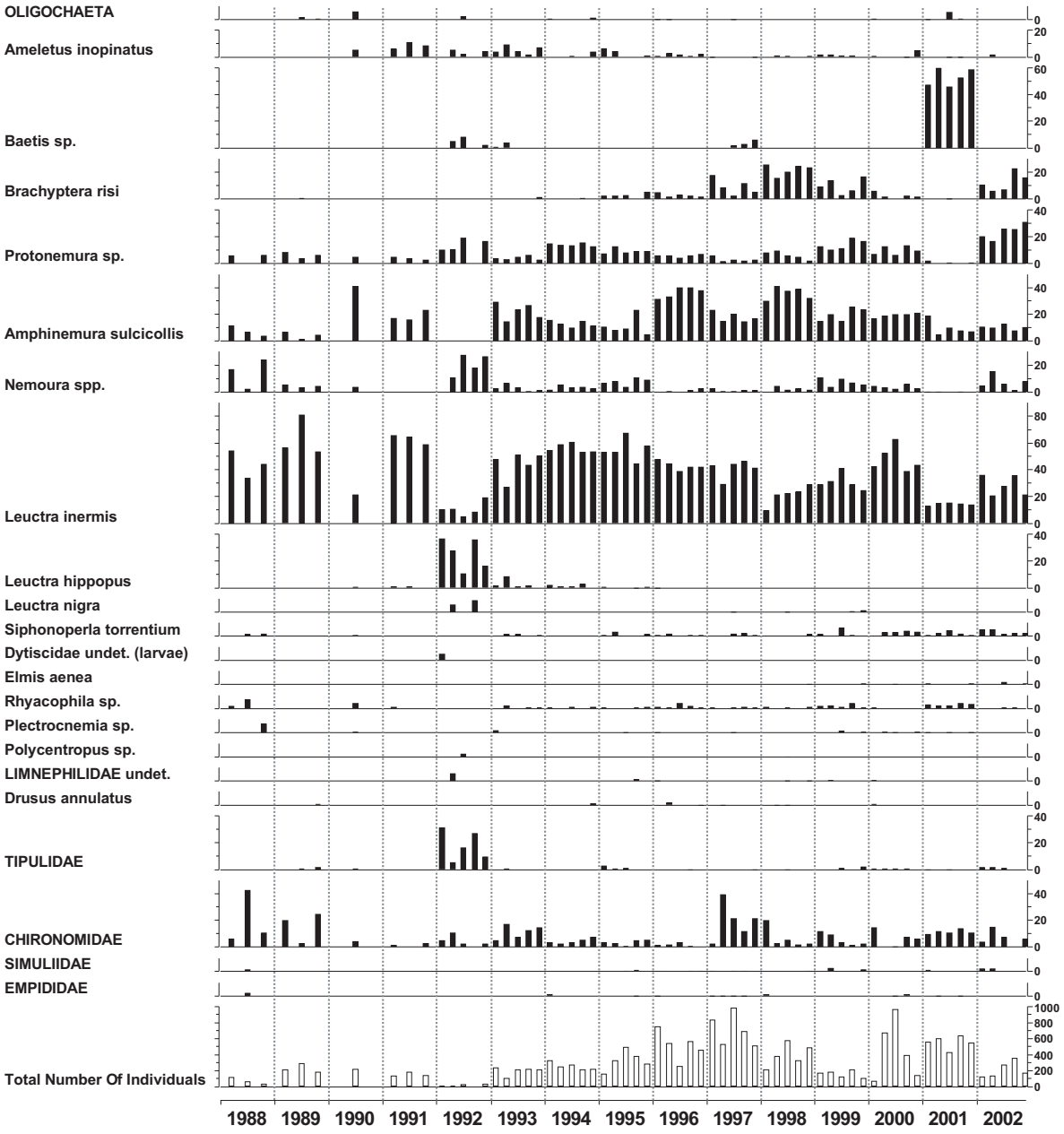
12.2 River Etherow - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



12.3 River Etherow - macroinvertebrate data

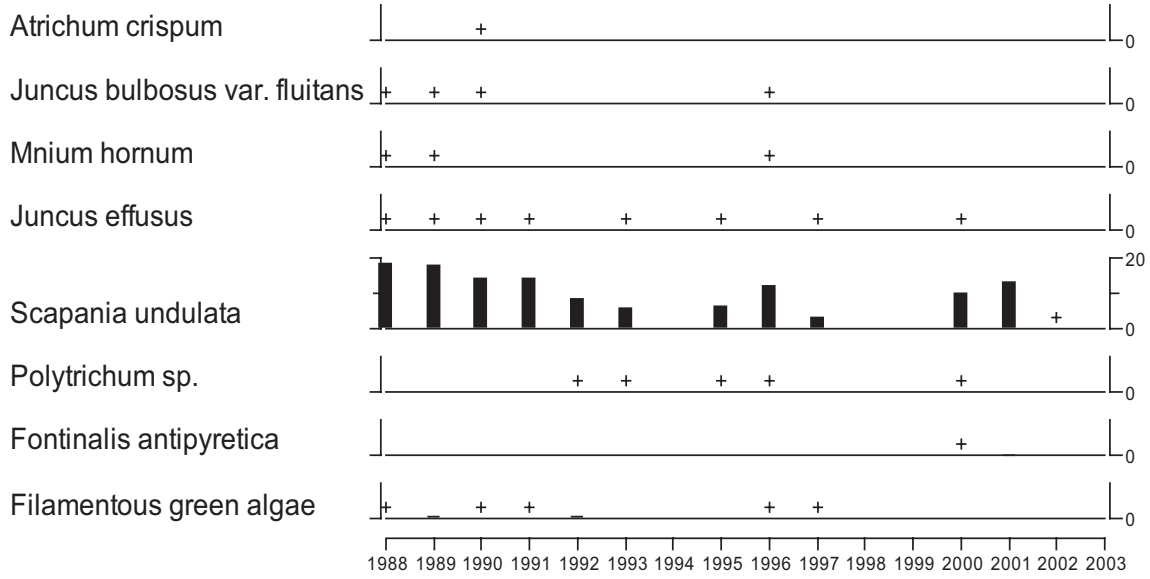
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



12.4 River Etherow - aquatic macrophyte data

percentage cover estimates for 50 m survery stretch

no data for 1994, 1998 and 1999

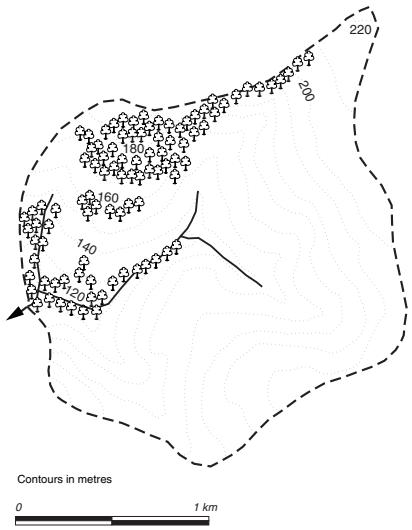


12.5a River Etherow - salmonid data

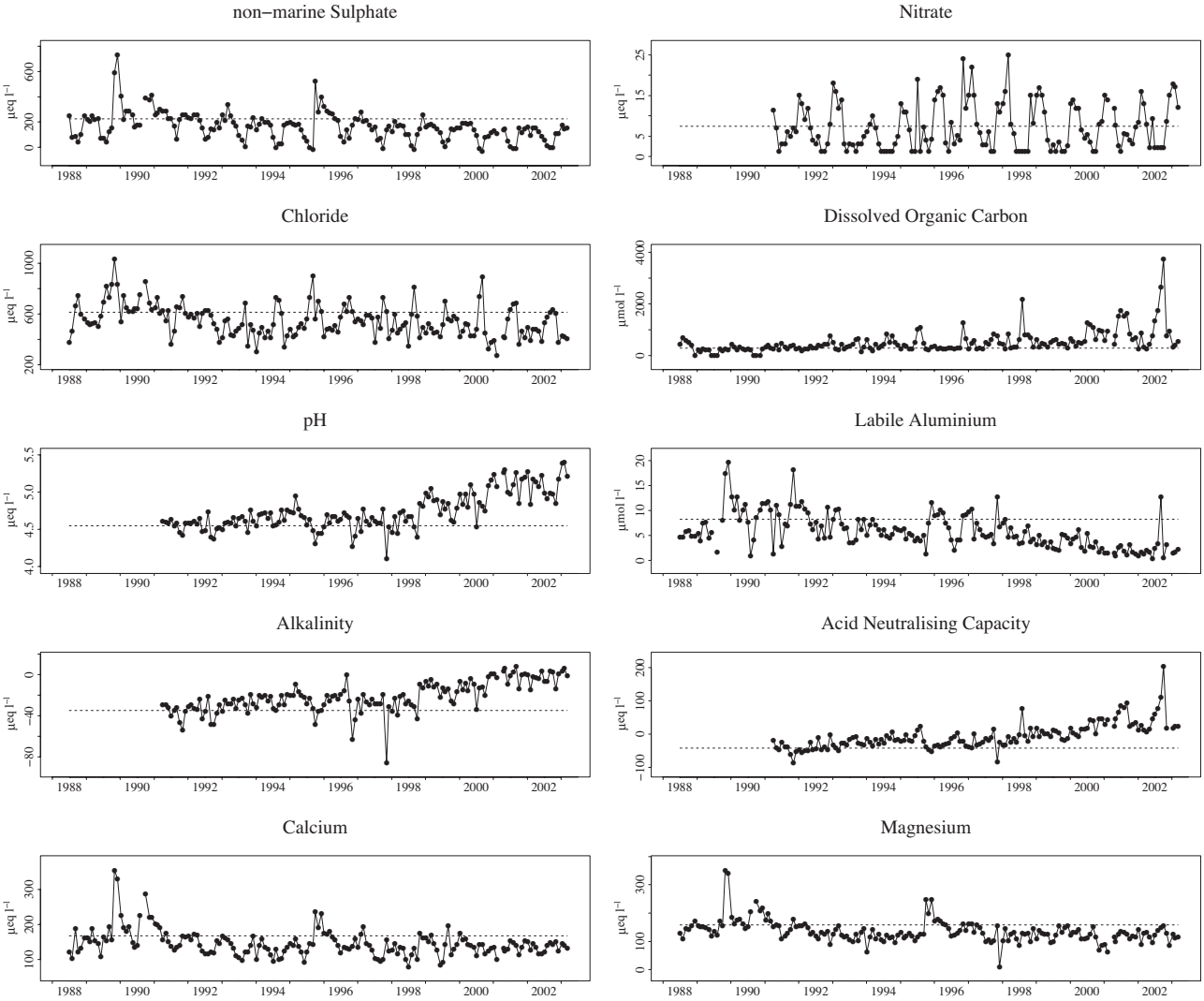
On sampling in 1989 this site was found to be fishless. As it lies immediately above a fish-less reservoir, which prohibits the possibility of fish colonising from further downstream, no further sampling has been carried out.

Site 13: Old Lodge

Grid reference:
TQ 456294



13.1a Time series for key chemical determinands



13.1b Summary data for key chemical determinands

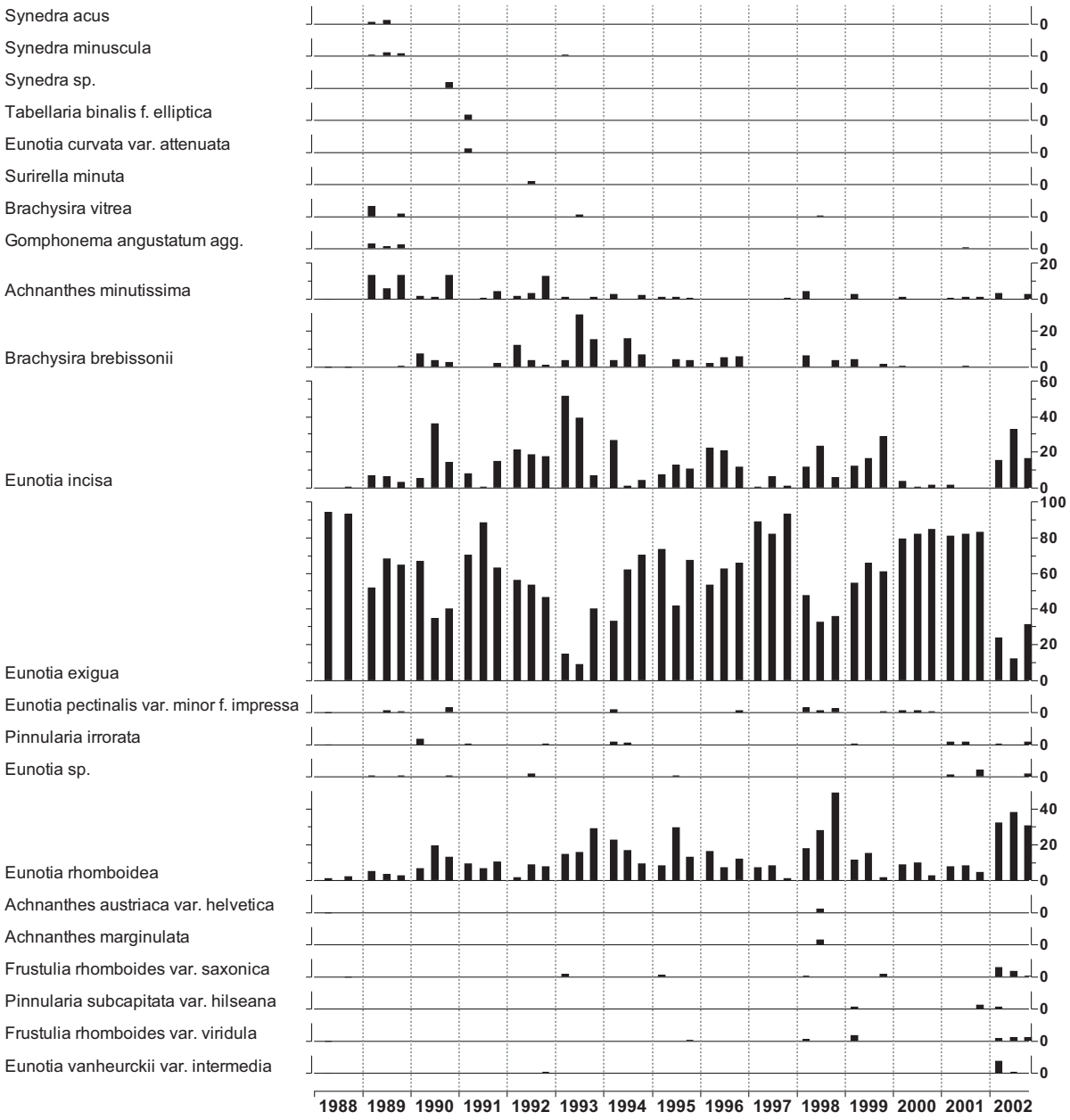
Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988 *	mean	225.1	7.4	615.1	4.55	-35.0	-41.7	112.7	167.2	156.2	491.0	22.1	269.3	223.1	3.5
- Mar 1993	st. dev	124.0	4.9	125.4	0.08	8.3	17.0	23.5	48.3	45.6	94.4	10.6	95.0	106.0	1.9
	min	38.8	1.3	361.1	4.37	-54.0	-86.8	71.1	102.3	87.2	313.2	6.6	36.2	22.4	0.2
	max	731.7	18.0	1038.1	4.73	-21.0	-2.9	201.6	353.8	347.1	813.5	55.5	533.0	530.5	9.2
Apr 1993	mean	163.1	7.5	531.7	4.61	-28.0	-22.3	99.7	137.1	127.8	437.6	20.0	212.9	168.9	5.3
- Mar 1998	st. dev	100.4	6.4	114.3	0.14	11.6	17.3	17.6	30.4	35.9	73.3	14.1	68.5	61.7	2.8
	min	-16.8	1.3	304.7	4.10	-86.0	-82.6	63.0	91.3	9.9	269.7	6.6	61.0	34.0	1.7
	max	524.9	25.0	902.7	4.95	-9.0	23.7	152.0	235.5	243.5	617.7	110.5	411.0	342.0	15.0
Apr 1998	mean	109.0	9.6	503.3	4.95	-10.2	24.1	86.3	134.8	118.4	413.6	18.3	178.3	84.8	9.7
- Mar 2003	st. dev	66.4	18.4	117.1	0.23	11.4	38.8	12.9	21.8	20.3	67.2	7.5	84.1	54.7	7.6
	min	-30.2	1.3	276.5	4.40	-43.0	-24.5	43.0	79.3	61.7	261.0	4.3	54.0	7.0	3.0
	max	254.1	142.9	891.4	5.40	8.0	203.3	114.0	195.6	154.6	574.2	45.3	616.0	343.0	45.0

* NO_3^-, pH, alk and ANC from April 1991

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

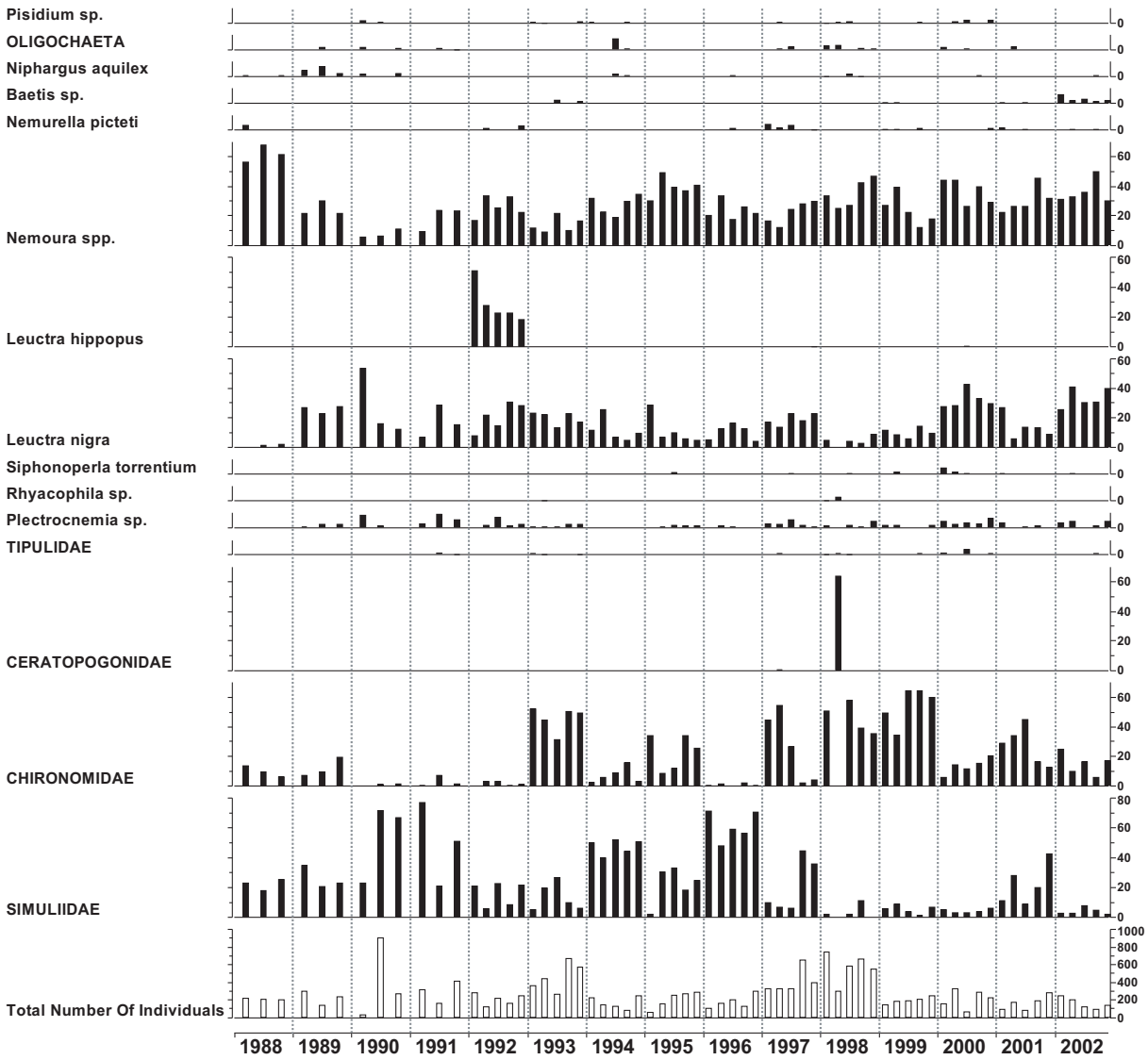
13.2 Old Lodge - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



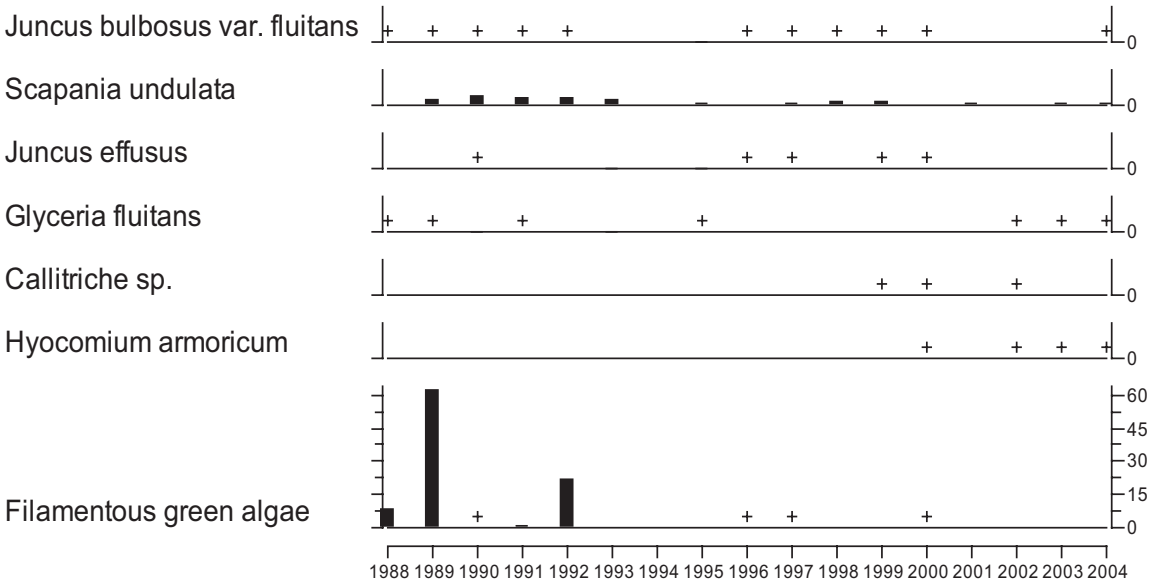
13.3 Old Lodge - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



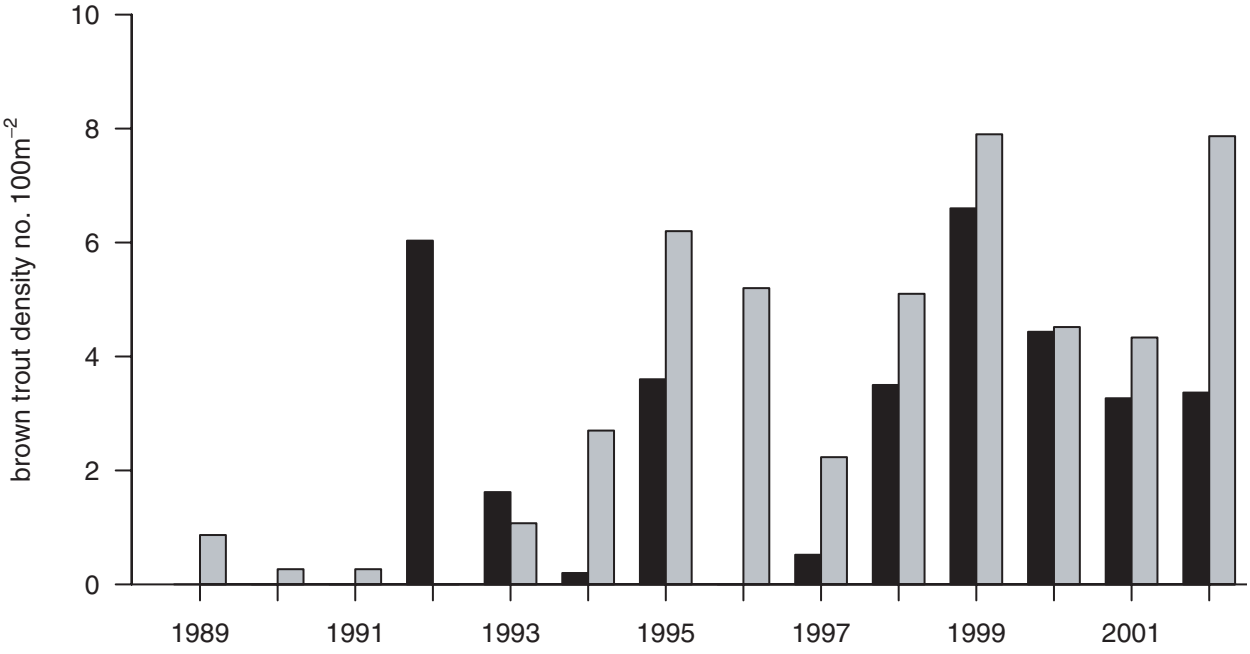
13.4 Old Lodge - aquatic macrophyte data

percentage cover estimates for 50 m survery stretch



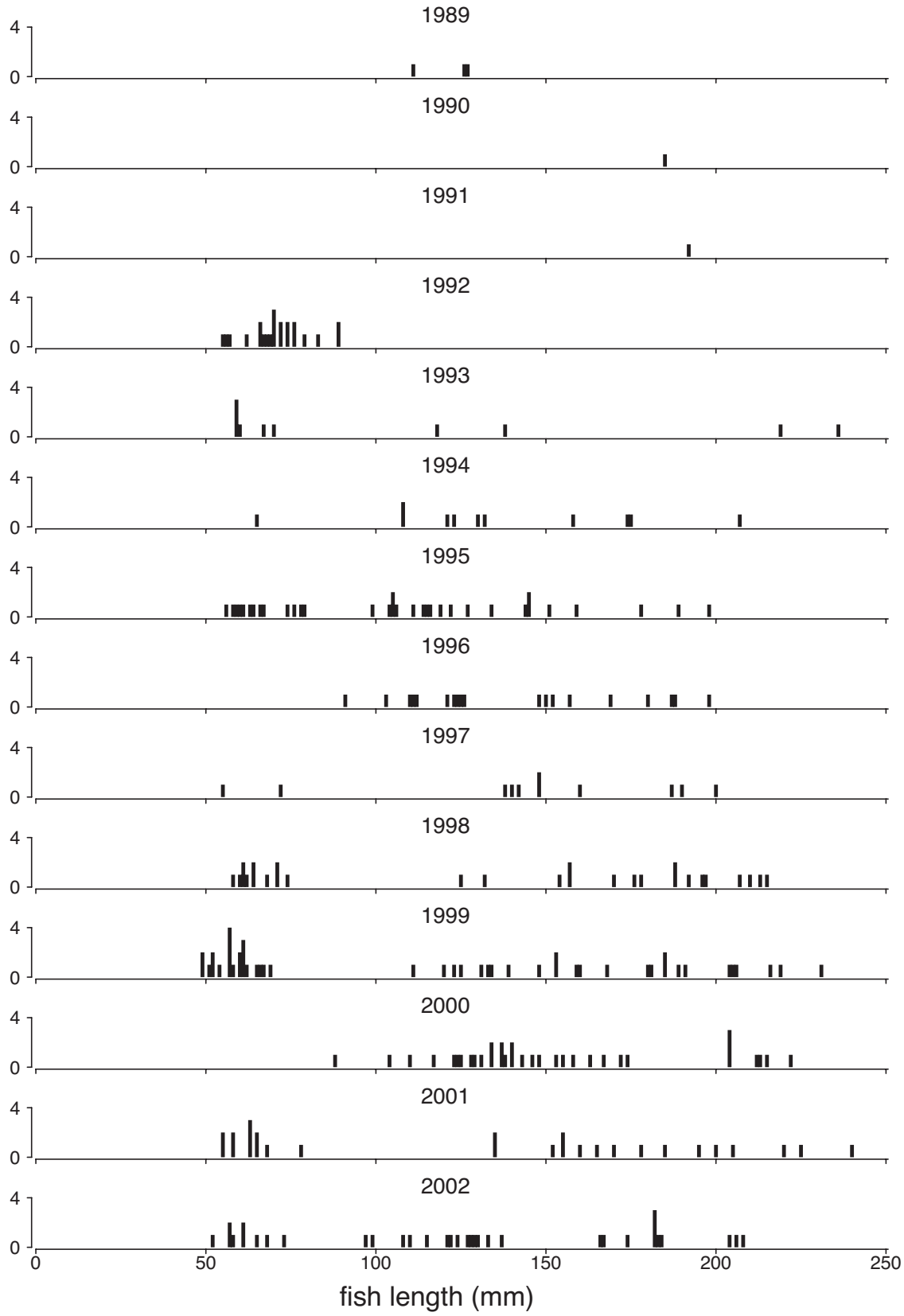
13.5a Old Lodge - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



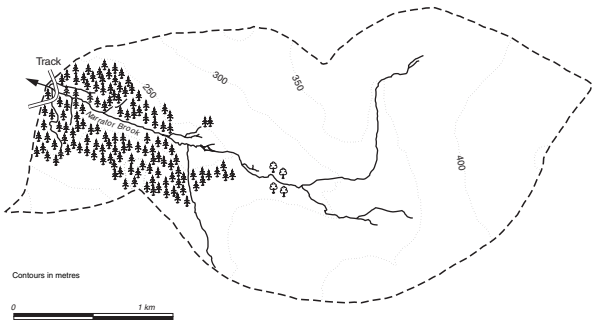
13.5b Old Lodge - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

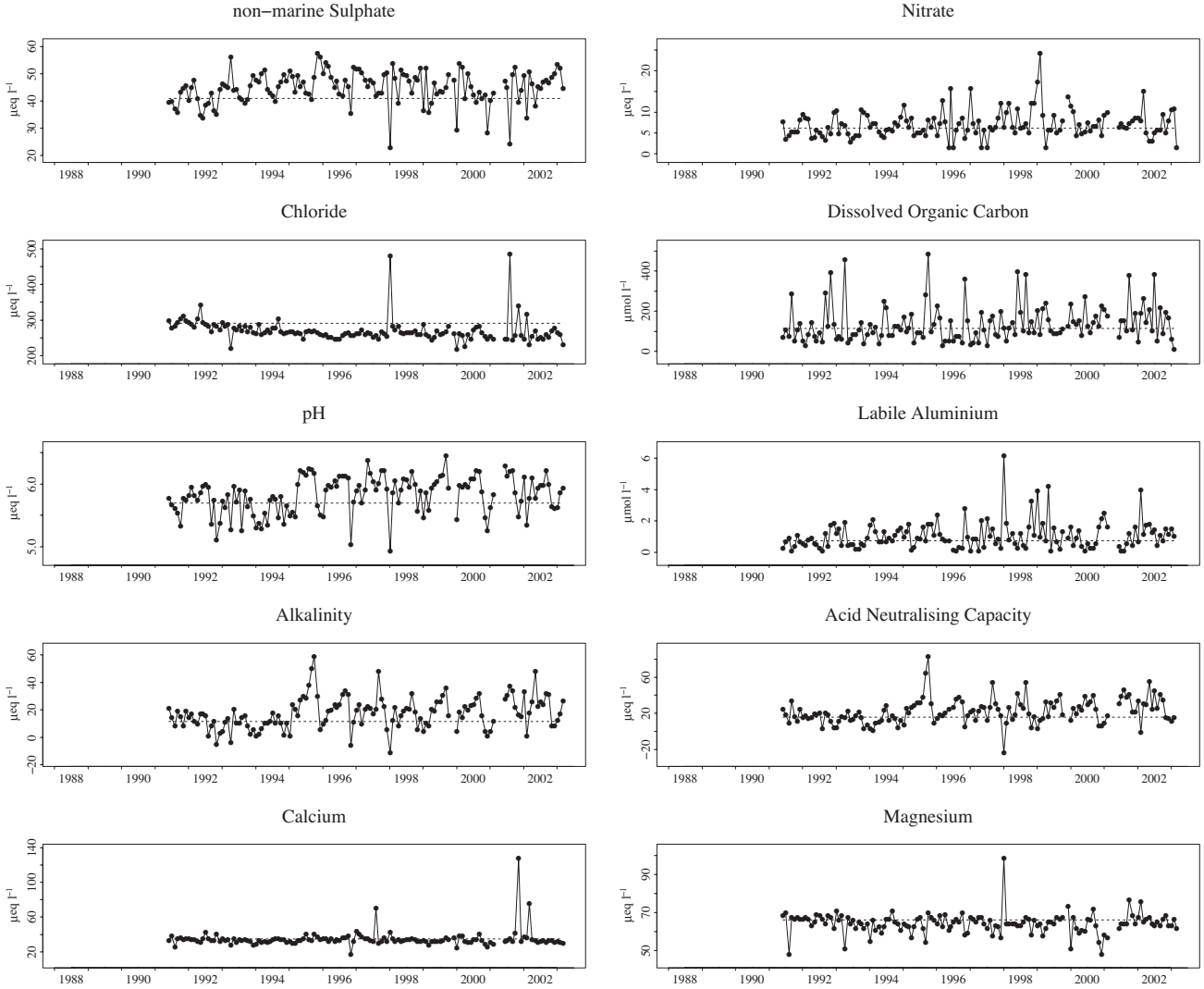


Site 14: Narrator Brook

Grid reference:
SX 568692



14.1a Time series for key chemical determinands



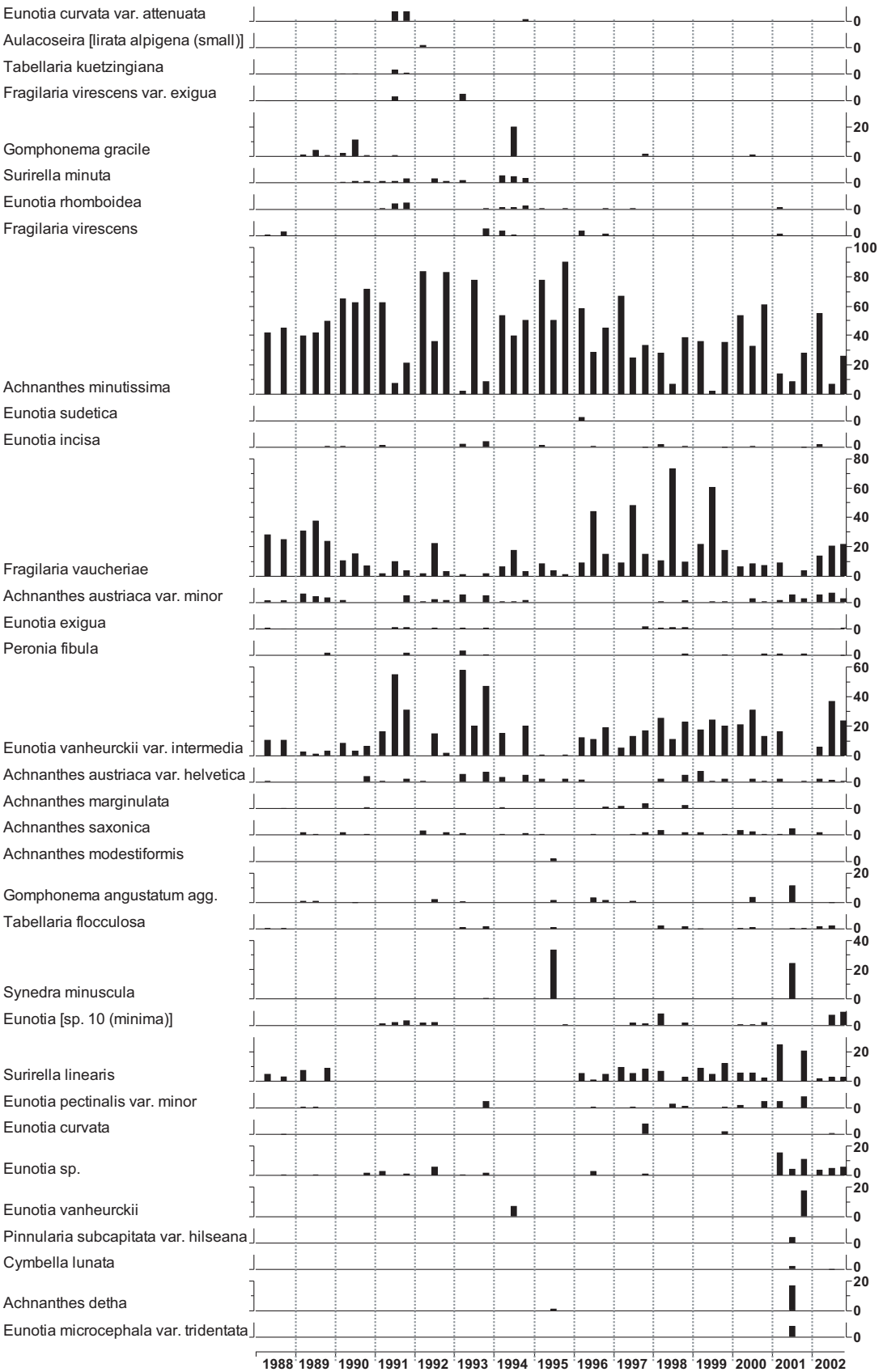
14.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
June 1991	mean	41.1	6.1	291.5	5.69	11.6	15.9	48.4	34.5	65.3	259.2	20.0	53.2	20.3	1.4
- Mar 1993	st. dev	4.2	2.2	15.8	0.23	6.5	7.2	1.3	3.4	4.4	7.3	2.2	40.8	13.3	1.1
	min	34.0	3.1	268.0	5.10	-5.0	3.5	45.5	25.9	47.7	248.0	16.4	11.0	2.5	0.3
	max	48.0	10.3	344.2	5.99	21.0	34.0	50.2	42.9	69.9	269.7	25.1	182.0	50.0	4.7
Apr 1993	mean	46.6	6.8	267.9	5.80	17.2	20.9	40.9	34.2	63.4	251.6	19.1	62.5	29.0	1.5
- Mar 1998	st. dev	5.5	3.1	30.4	0.33	13.0	15.3	7.4	6.0	5.9	15.6	2.9	44.8	25.0	1.1
	min	23.0	1.3	220.0	4.93	-11.0	-23.1	29.0	17.5	50.2	208.8	11.5	20.0	2.5	0.3
	max	57.8	15.7	479.6	6.37	58.4	82.1	58.0	69.4	97.1	335.0	27.1	236.0	166.0	5.8
Apr 1998	mean	44.8	7.7	264.5	5.90	19.8	25.5	34.9	35.3	63.3	240.1	19.2	78.1	31.7	1.9
- Mar 2003	st. dev	6.3	3.8	35.7	0.26	10.3	13.0	4.9	14.1	4.9	14.8	2.8	49.2	25.6	1.0
	min	24.5	1.3	217.2	5.25	0.6	-1.0	27.0	25.0	47.7	195.8	13.8	21.0	2.5	0.1
	max	53.9	24.3	485.2	6.45	48.0	54.9	47.0	127.2	75.7	274.1	33.5	202.0	113.0	4.8

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

14.2 Narrator Brook - epilithic diatom data

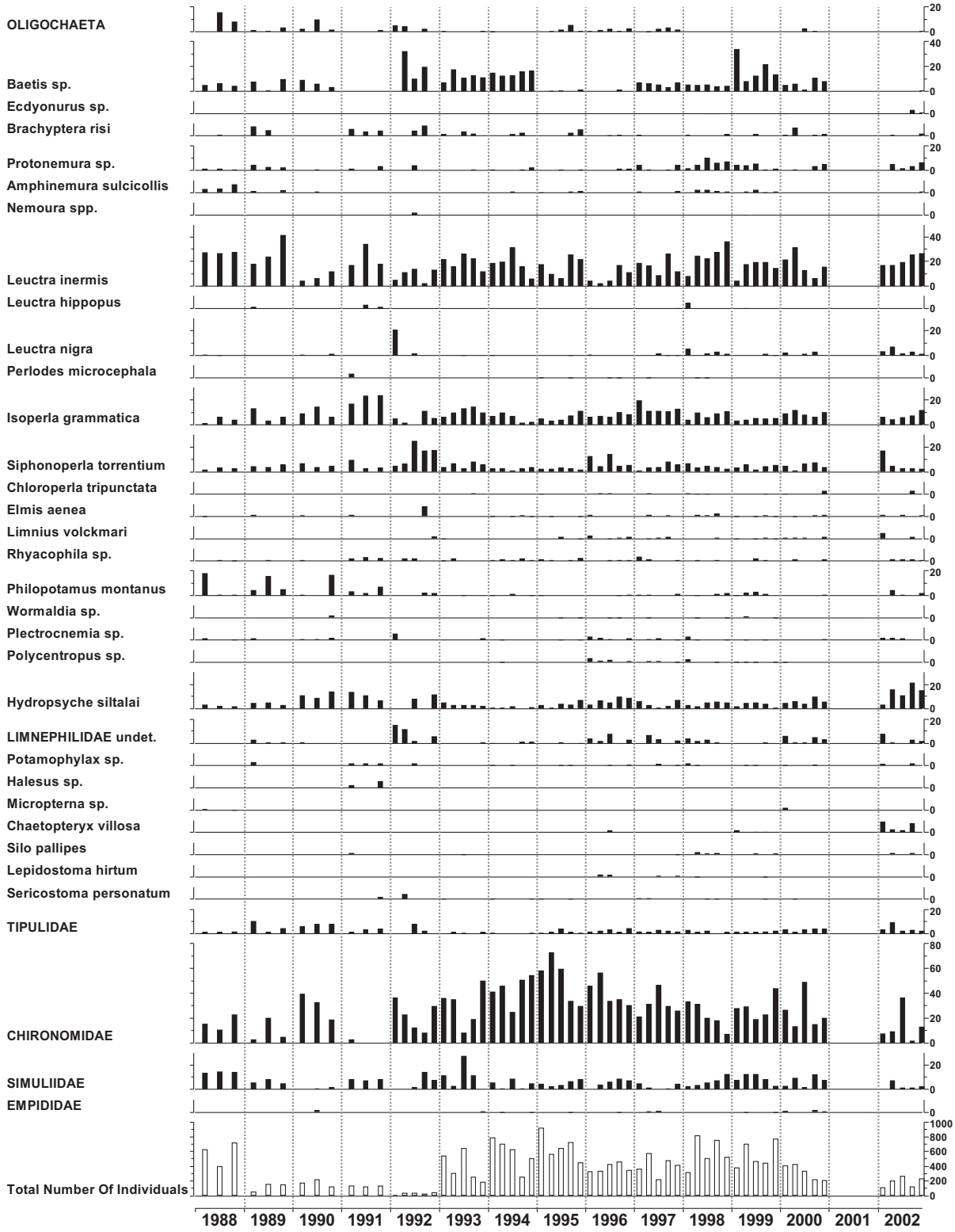
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



14.3 Narrator Brook - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

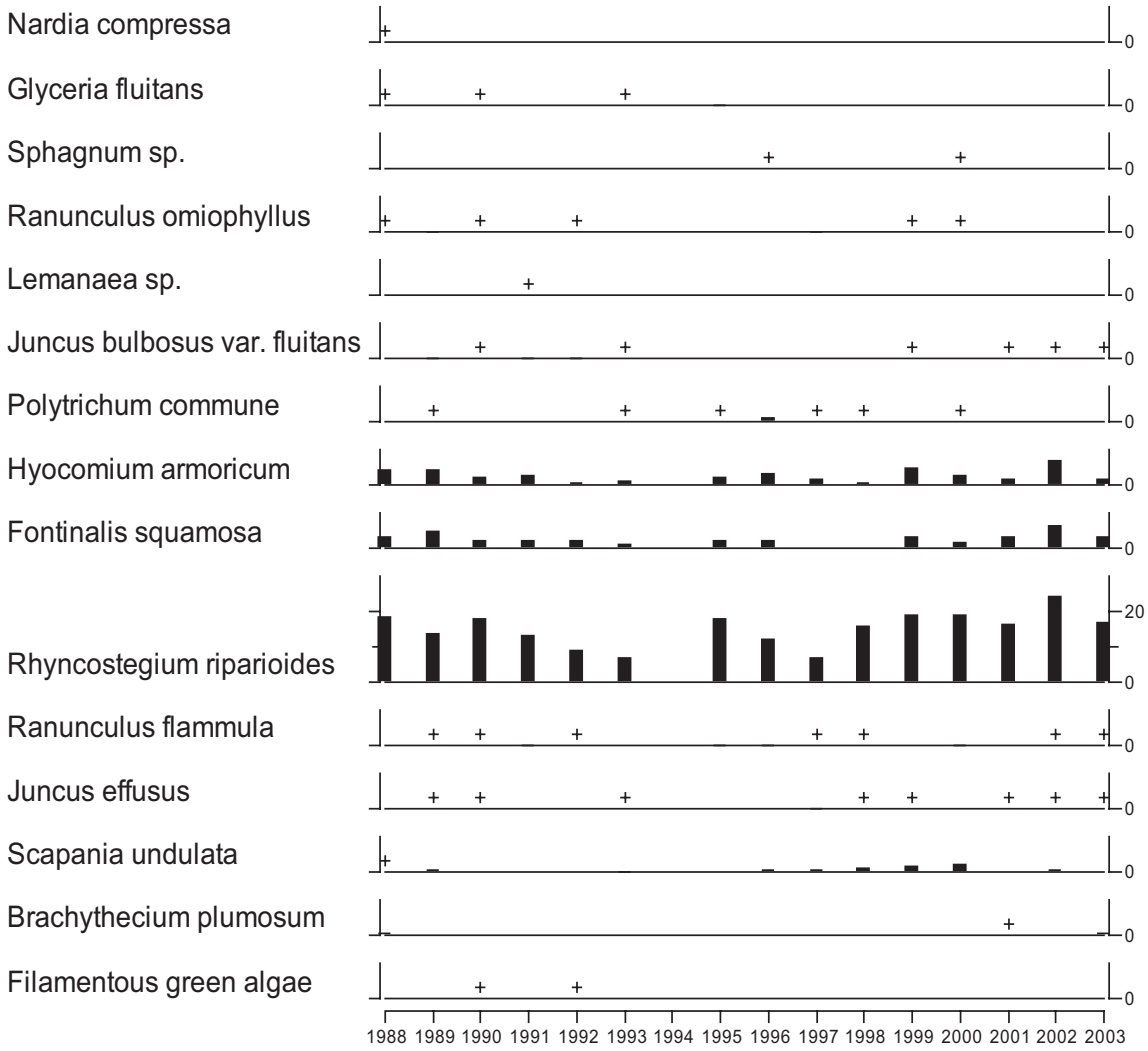
no data for 2001



14.4 Narrator Brook - aquatic macrophyte data

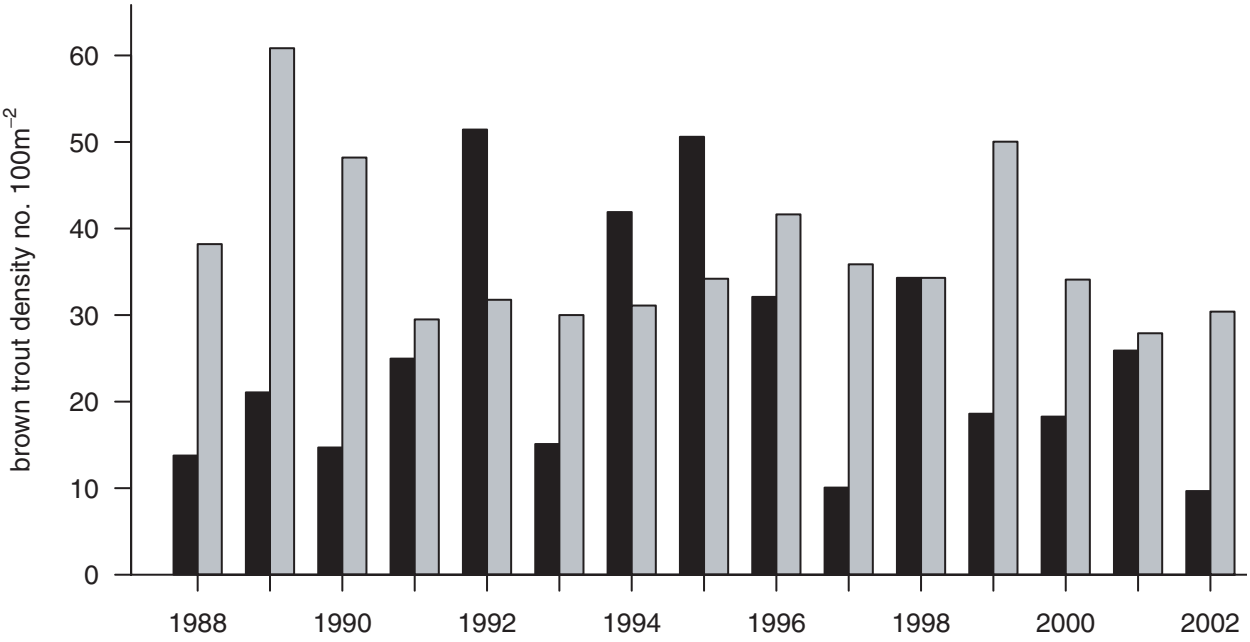
percentage cover estimates for 50 m survery stretch

no data for 1994



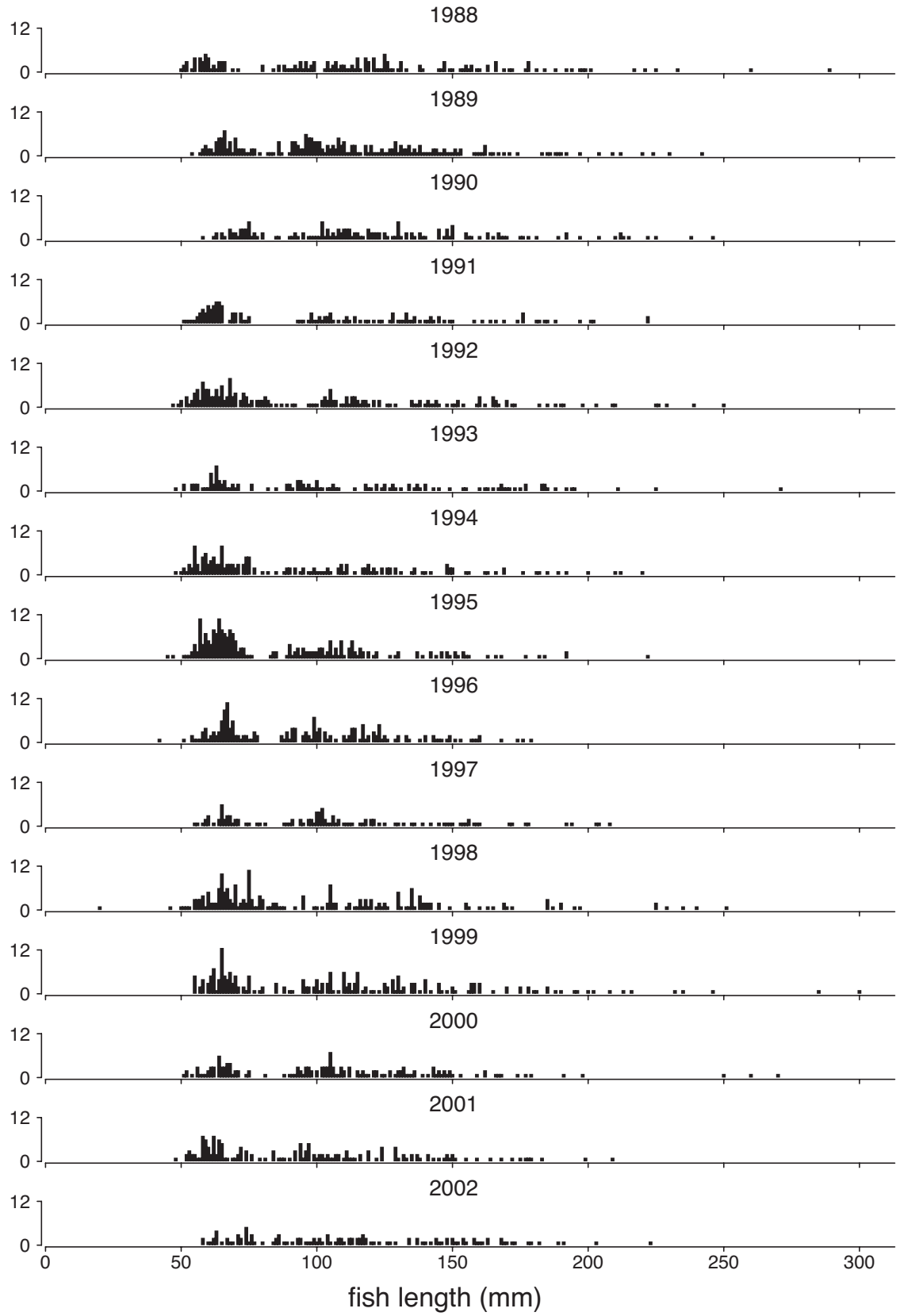
14.5a Narrator Brook - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



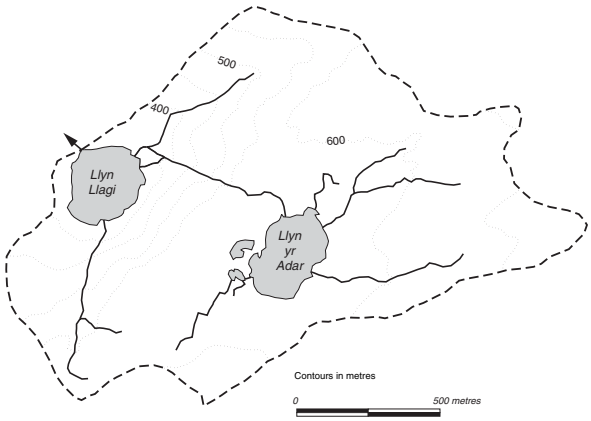
14.5b Narrator Brook - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

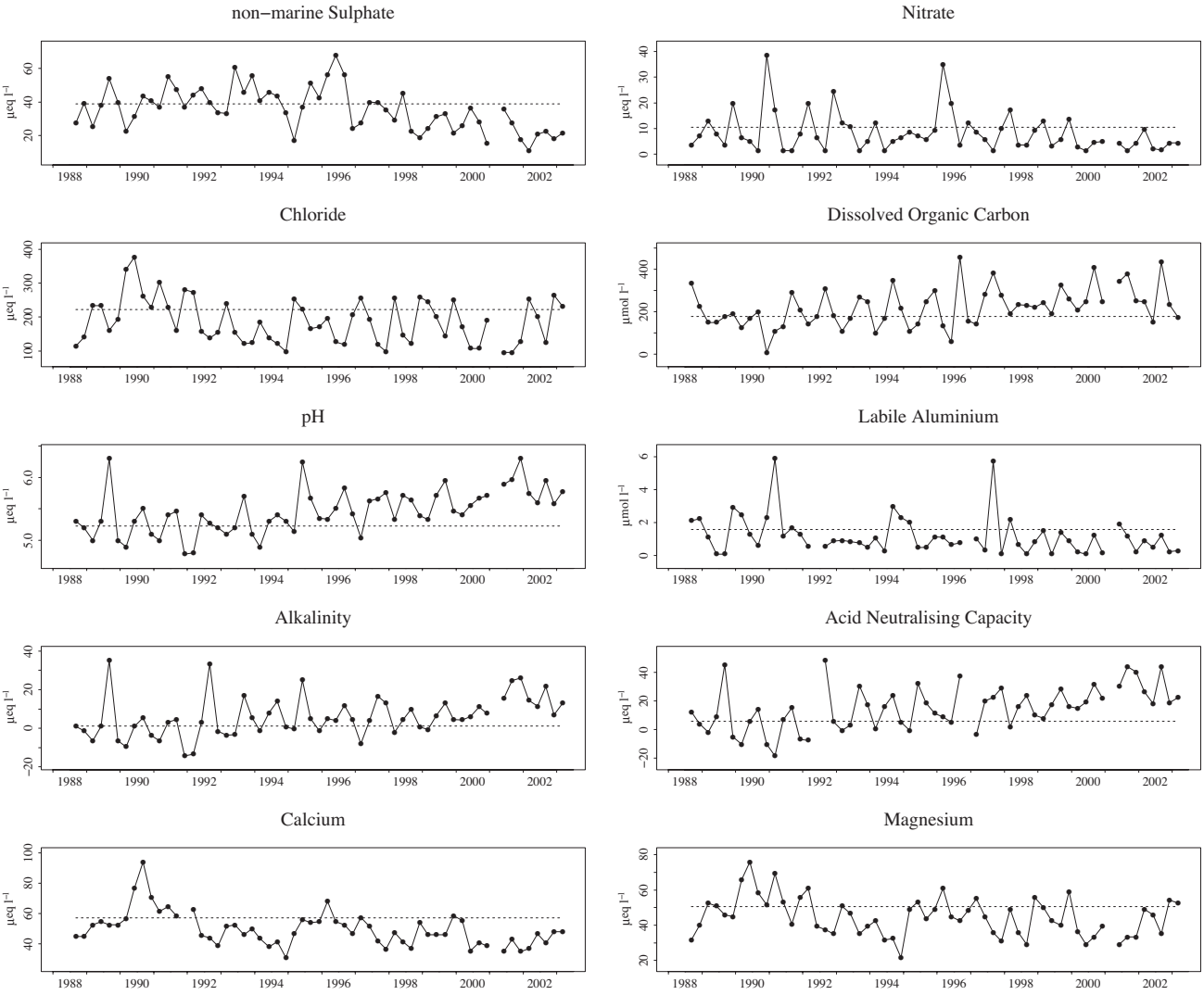


Site 15: Llyn Llagi

Grid reference:
SH 649483



15.1a Time series for key chemical determinands



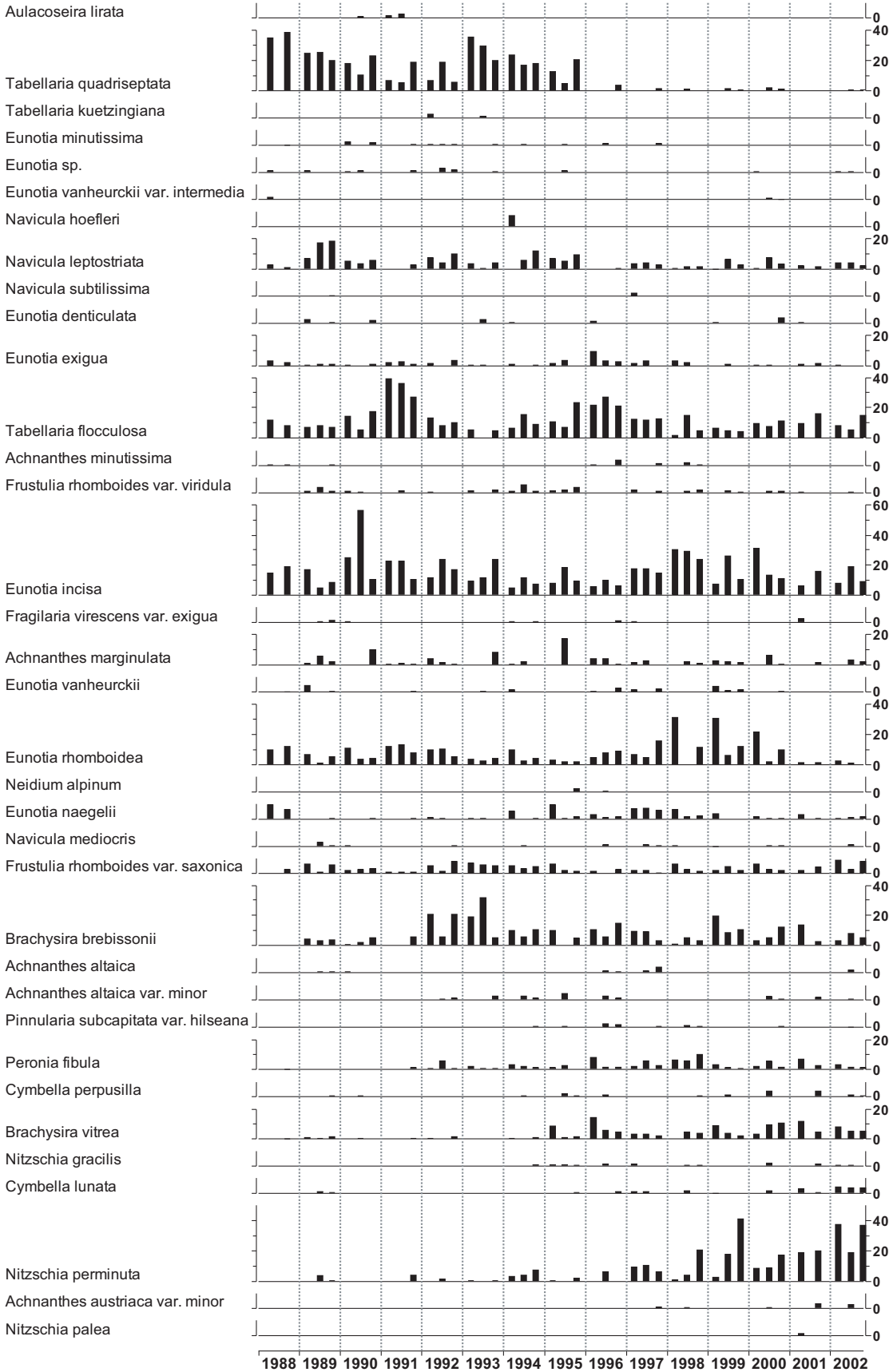
15.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ c\ m^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Sep 1988 - Mar 1993	mean	39.0	10.4	222.7	5.23	1.0	5.6	36.3	56.9	49.9	187.5	3.6	75.8	42.6	2.1
	st. dev	8.8	9.8	72.9	0.34	13.0	17.1	9.1	13.5	11.8	49.3	1.6	38.6	36.7	0.9
	min	22.8	1.3	115.7	4.78	-14.3	-18.4	23.0	38.4	31.3	113.1	2.6	5.0	2.5	0.1
	max	55.4	38.6	378.0	6.30	35.2	48.4	58.0	93.8	74.9	291.5	6.6	192.0	159.0	4.0
Apr 1993 - Mar 1998	mean	42.6	9.3	166.7	5.44	5.9	14.7	26.4	48.4	42.3	151.4	3.4	72.6	35.4	2.6
	st. dev	13.0	7.8	52.8	0.32	8.2	12.4	6.6	8.4	9.4	33.5	1.4	30.7	35.6	1.2
	min	17.3	1.3	98.7	4.90	-8.0	-3.5	13.0	30.9	21.4	100.1	2.0	38.0	2.5	0.7
	max	68.0	35.0	256.7	6.25	25.0	37.2	36.0	67.9	60.0	200.1	6.6	193.0	154.0	5.5
Apr 1998 - Mar 2003	mean	25.2	5.1	175.9	5.70	10.6	23.8	24.1	43.7	40.7	153.9	3.7	74.2	19.7	3.2
	st. dev	8.3	3.7	61.4	0.24	7.5	10.5	8.2	7.0	9.6	39.4	2.0	23.5	15.3	0.9
	min	11.1	1.3	95.9	5.33	-0.6	7.9	11.0	34.9	28.8	104.4	0.6	41.7	2.5	1.8
	max	45.1	13.7	265.2	6.30	26.0	44.0	36.0	58.4	58.4	208.8	7.7	116.0	52.0	5.2

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

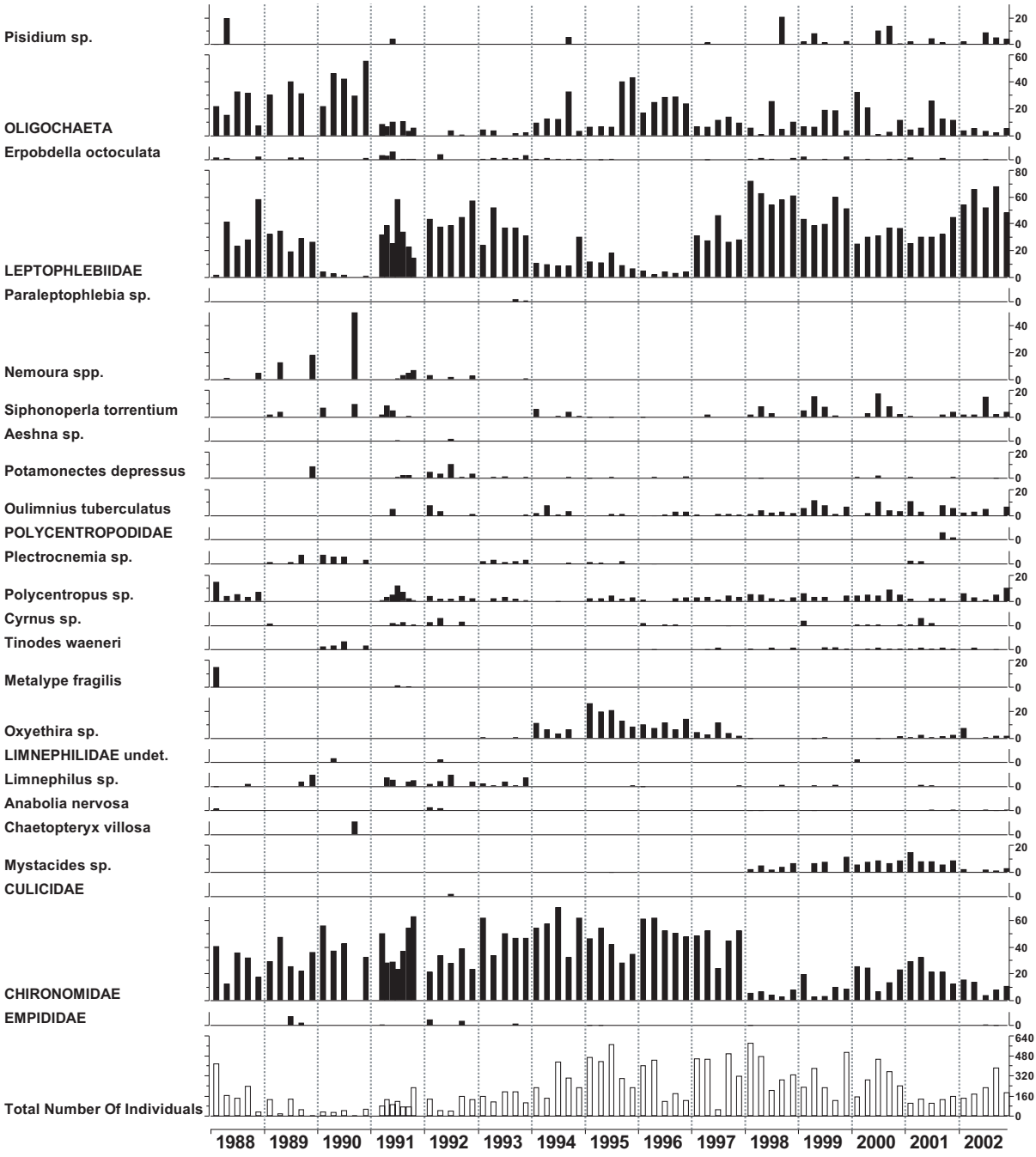
15.2 Llyn Llagi - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



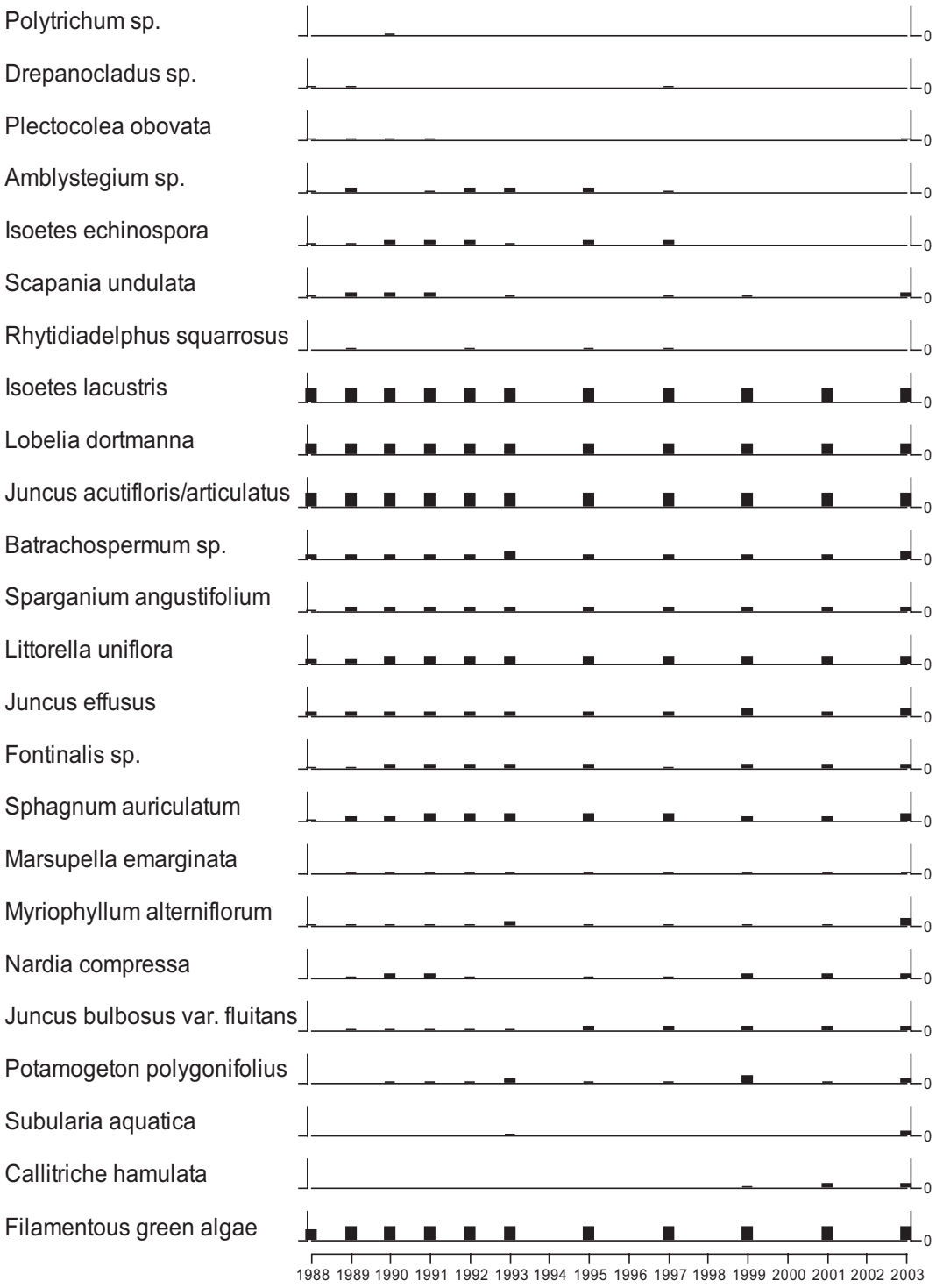
15.3 Llyn Llagi - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



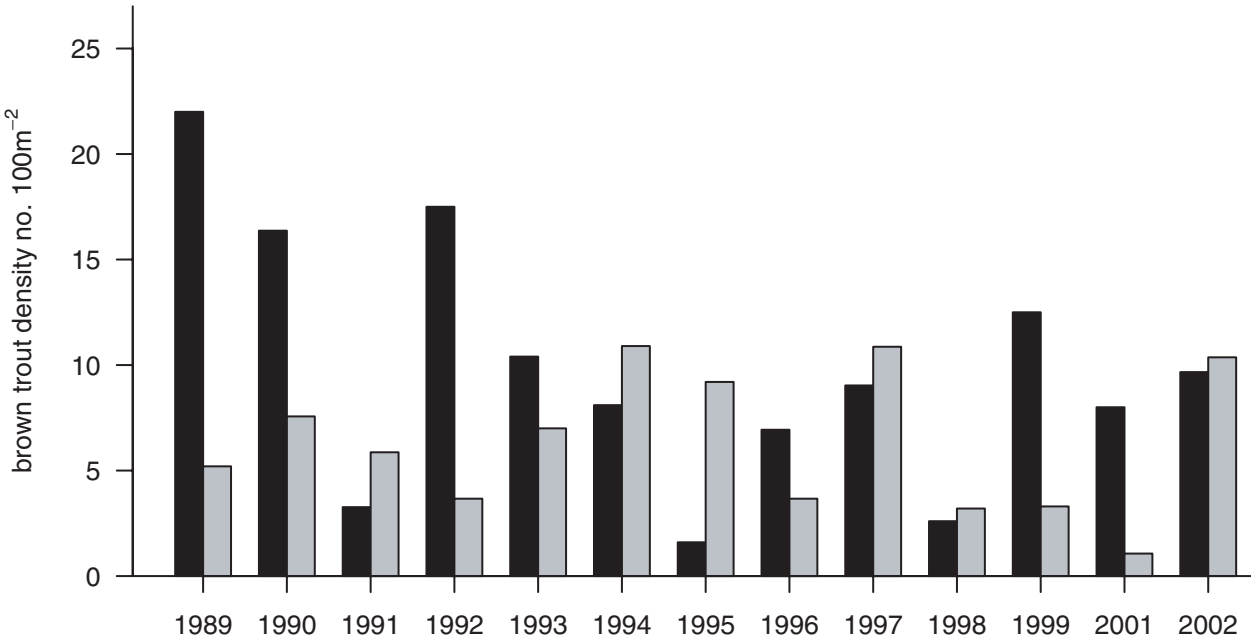
15.4 Llyn Llagi - aquatic macrophyte data

relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



15.5a Llyn Llagi - salmonid data

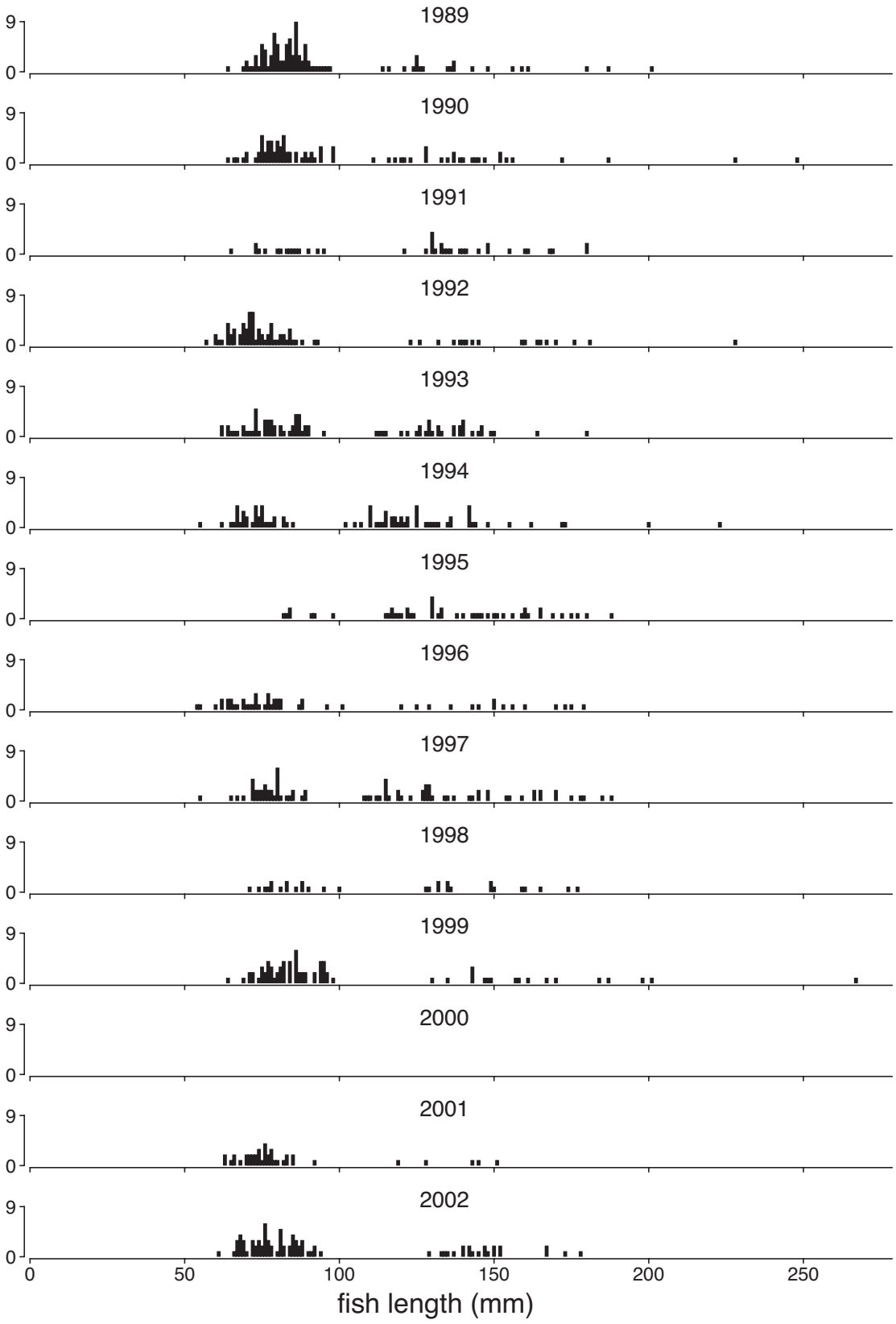
Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



15.5b Llyn Llagi - salmonid data

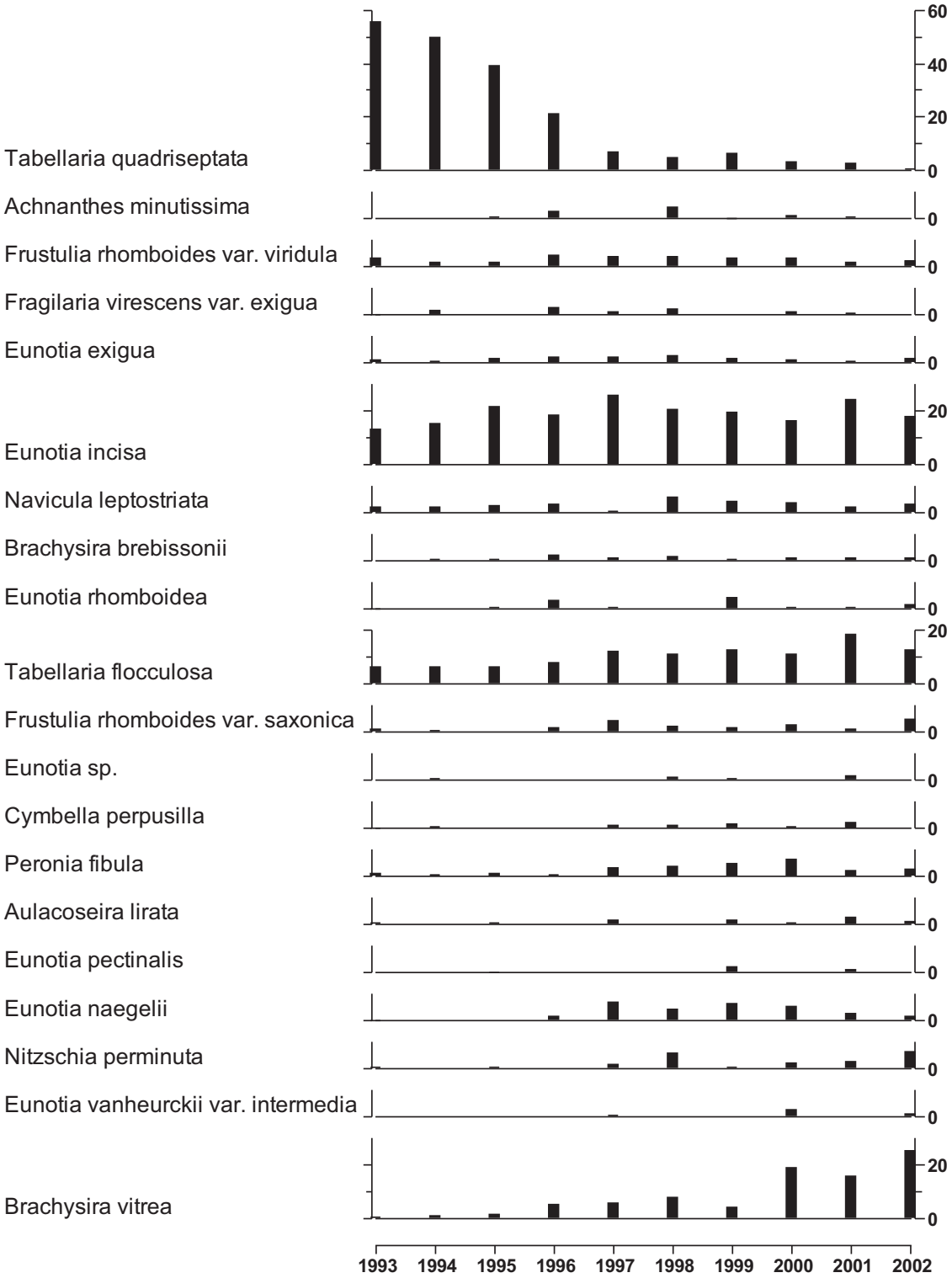
Brown trout (*Salmo trutta*) length frequency summaries

no data for 2000



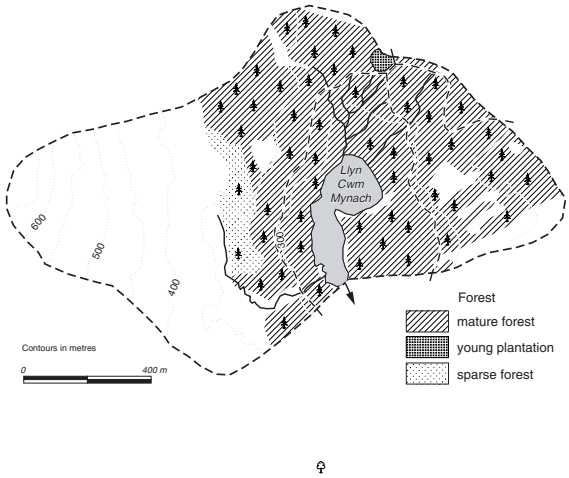
15.6 Llyn Llagi - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

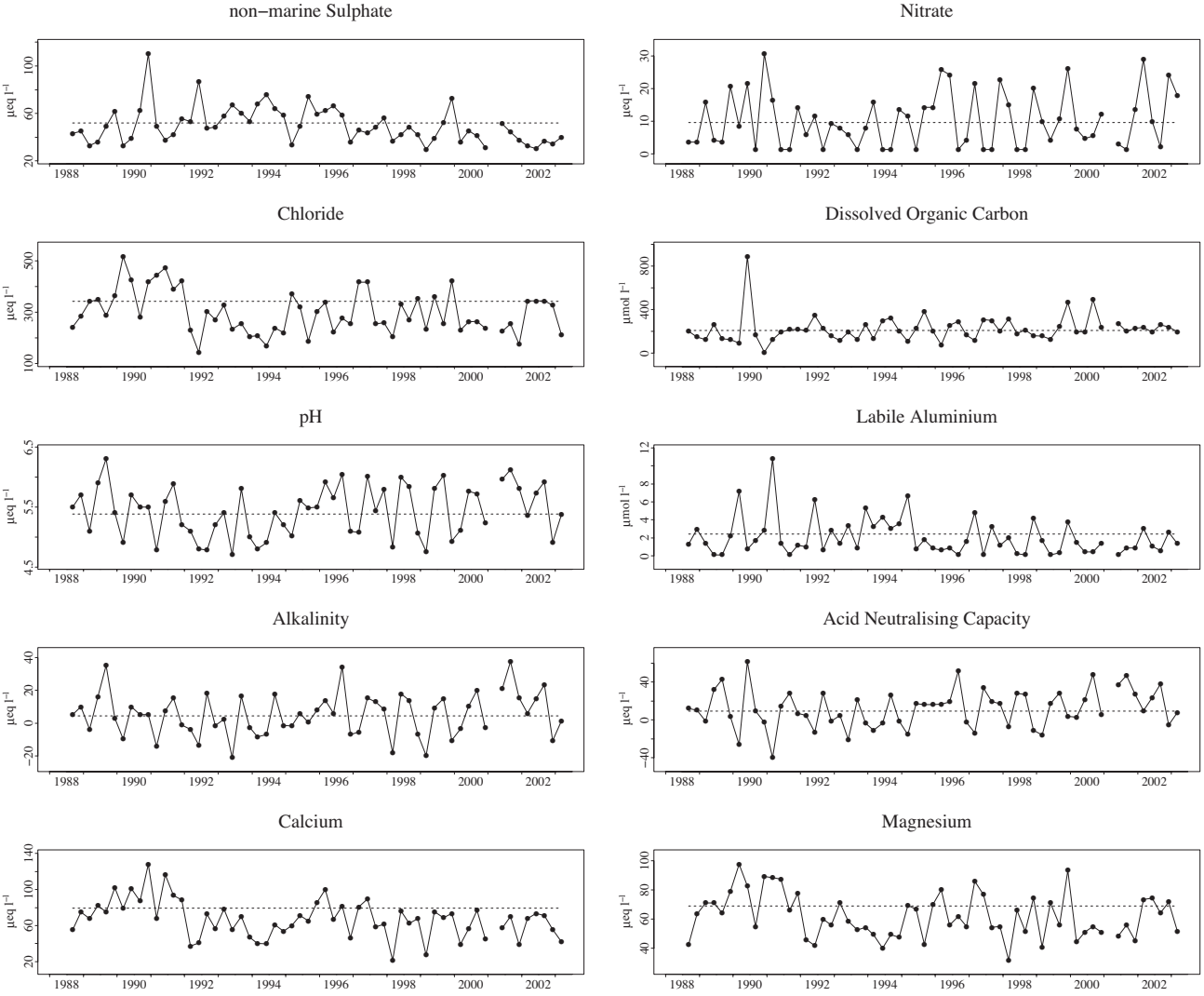


Site 16: Llyn Cwm Mynach

Grid reference:
SH 678238



16.1a Time series for key chemical determinands



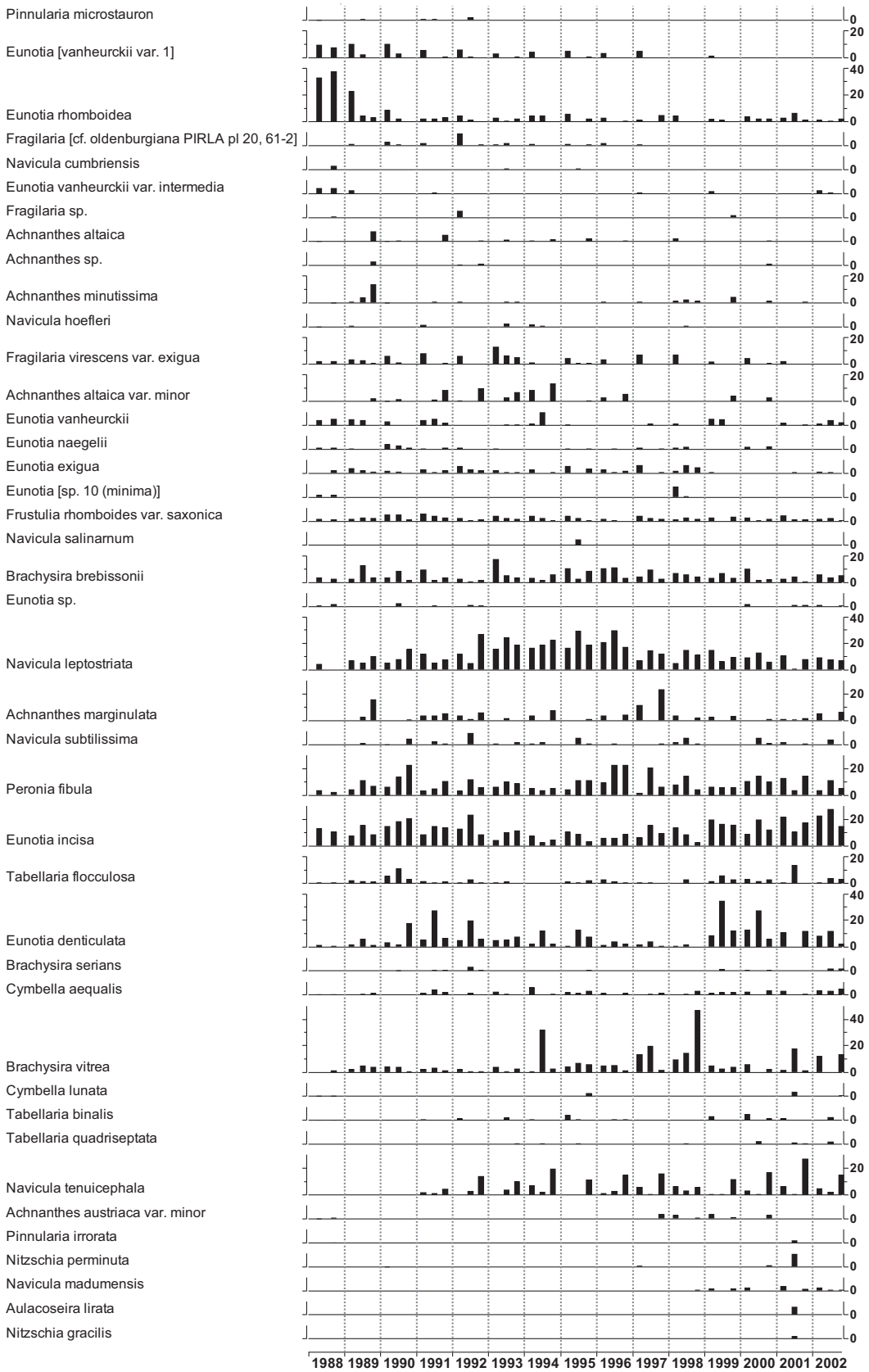
16.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Sep 1988 - Mar 1993	mean	52.4	9.6	343.1	5.38	4.6	9.2	51.9	79.0	68.0	294.7	3.4	106.5	65.3	2.5
	st. dev	19.0	8.3	94.4	0.42	11.9	23.3	10.4	23.3	16.1	63.4	1.7	87.4	74.8	2.2
	min	33.2	1.3	143.9	4.78	-14.3	-39.9	33.0	37.4	41.1	178.4	2.6	5.0	2.5	0.1
	max	110.6	30.7	519.1	6.30	35.2	61.5	72.0	127.7	96.2	404.6	7.4	378.0	291.0	10.7
Apr 1993 - Mar 1998	mean	56.1	10.3	268.3	5.36	3.4	8.7	40.4	62.6	57.0	243.4	3.4	127.6	65.1	2.7
	st. dev	12.2	8.7	72.3	0.42	13.2	18.6	10.6	19.0	13.5	51.6	1.3	65.6	50.5	1.0
	min	34.1	1.3	169.3	4.70	-21.0	-20.8	24.0	21.5	31.3	174.0	2.3	25.0	2.5	0.9
	max	76.1	25.7	417.5	6.04	34.4	51.6	64.0	99.8	84.7	348.0	6.4	220.0	180.0	4.6
Apr 1998 - Mar 2003	mean	39.4	10.8	287.1	5.55	8.1	17.8	39.5	60.1	59.1	252.1	4.7	111.3	34.9	2.9
	st. dev	7.1	8.9	64.9	0.44	14.3	18.6	8.0	15.1	13.4	45.4	1.7	56.5	33.8	1.1
	min	28.9	1.3	174.9	4.76	-19.6	-16.2	25.0	26.9	40.3	169.7	1.8	28.0	2.5	1.5
	max	52.7	29.1	423.2	6.12	37.6	48.3	53.0	76.8	92.1	348.0	7.2	220.0	114.0	5.9

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

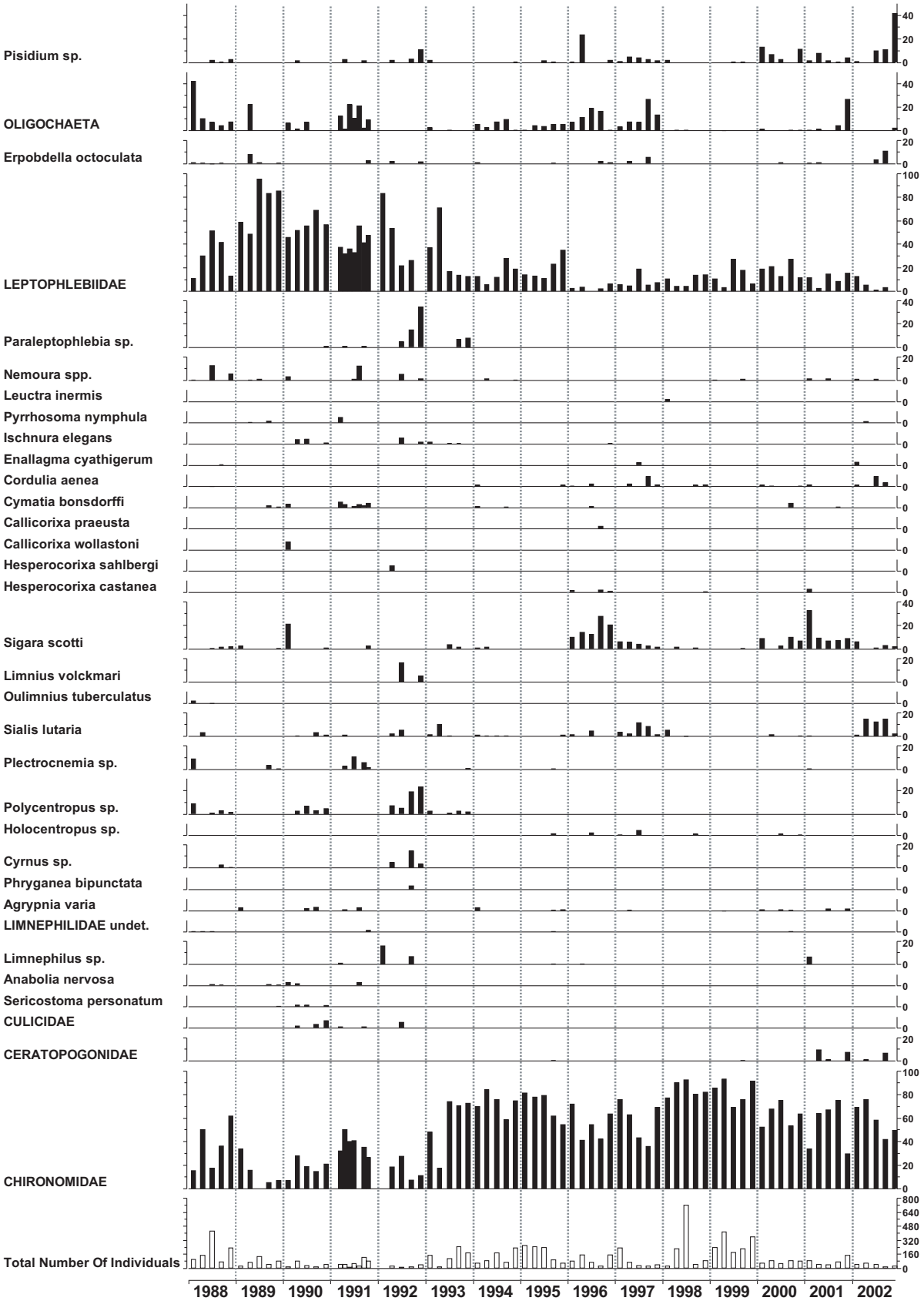
16.2 Llyn Cwn Mynach - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



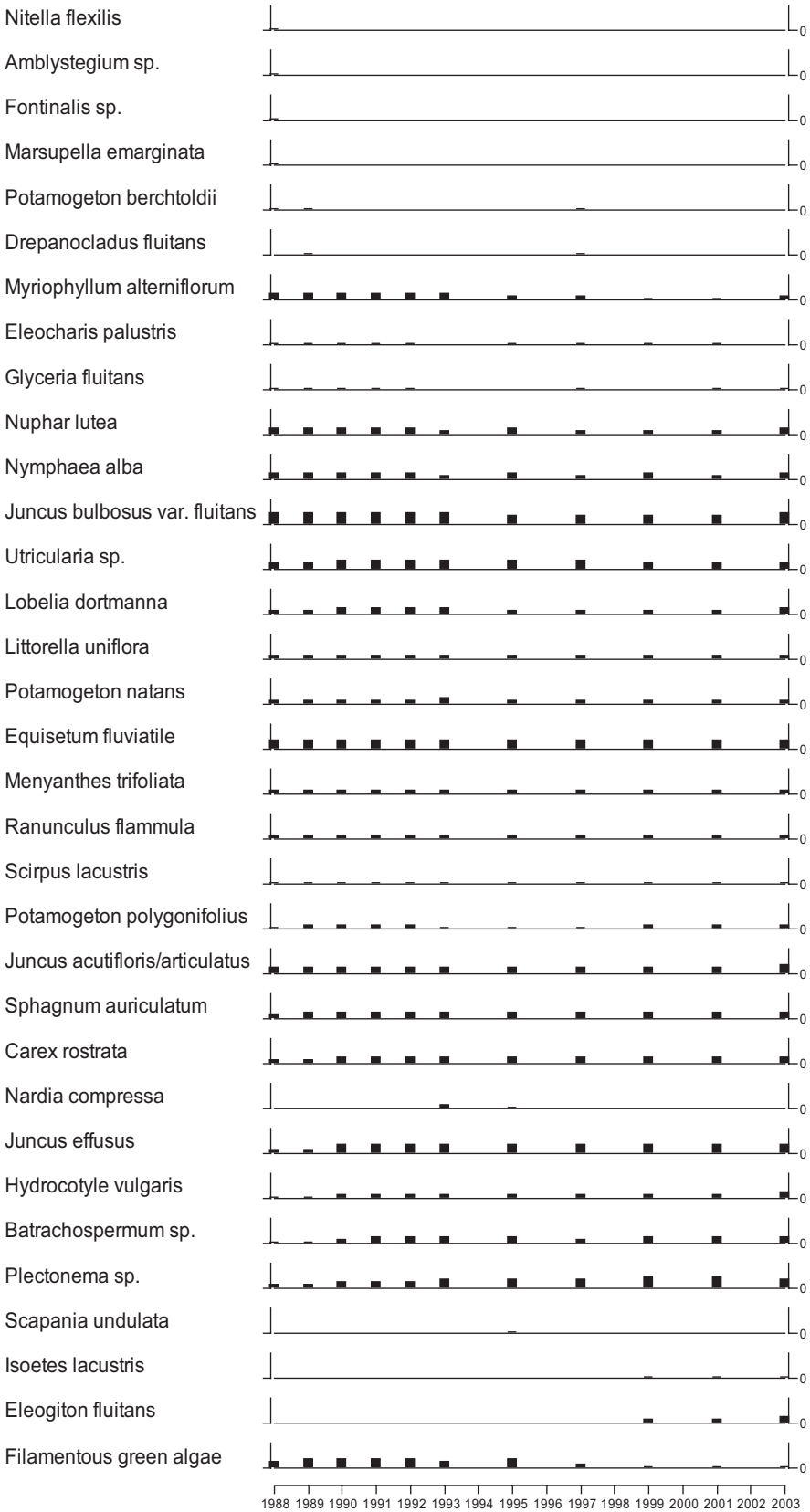
16.3 Llyn Cwn Mynach - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



16.4 Llyn Cwm Mynach - aquatic macrophyte data

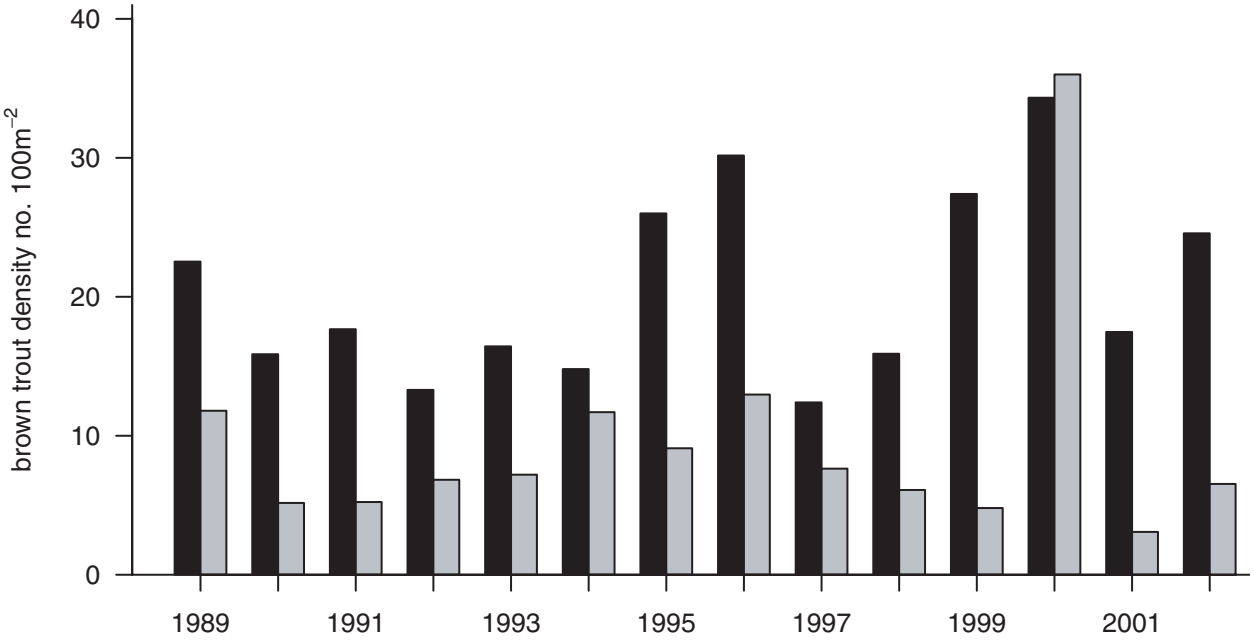
relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



16.5a Llyn Cwm Mynach - salmonid data

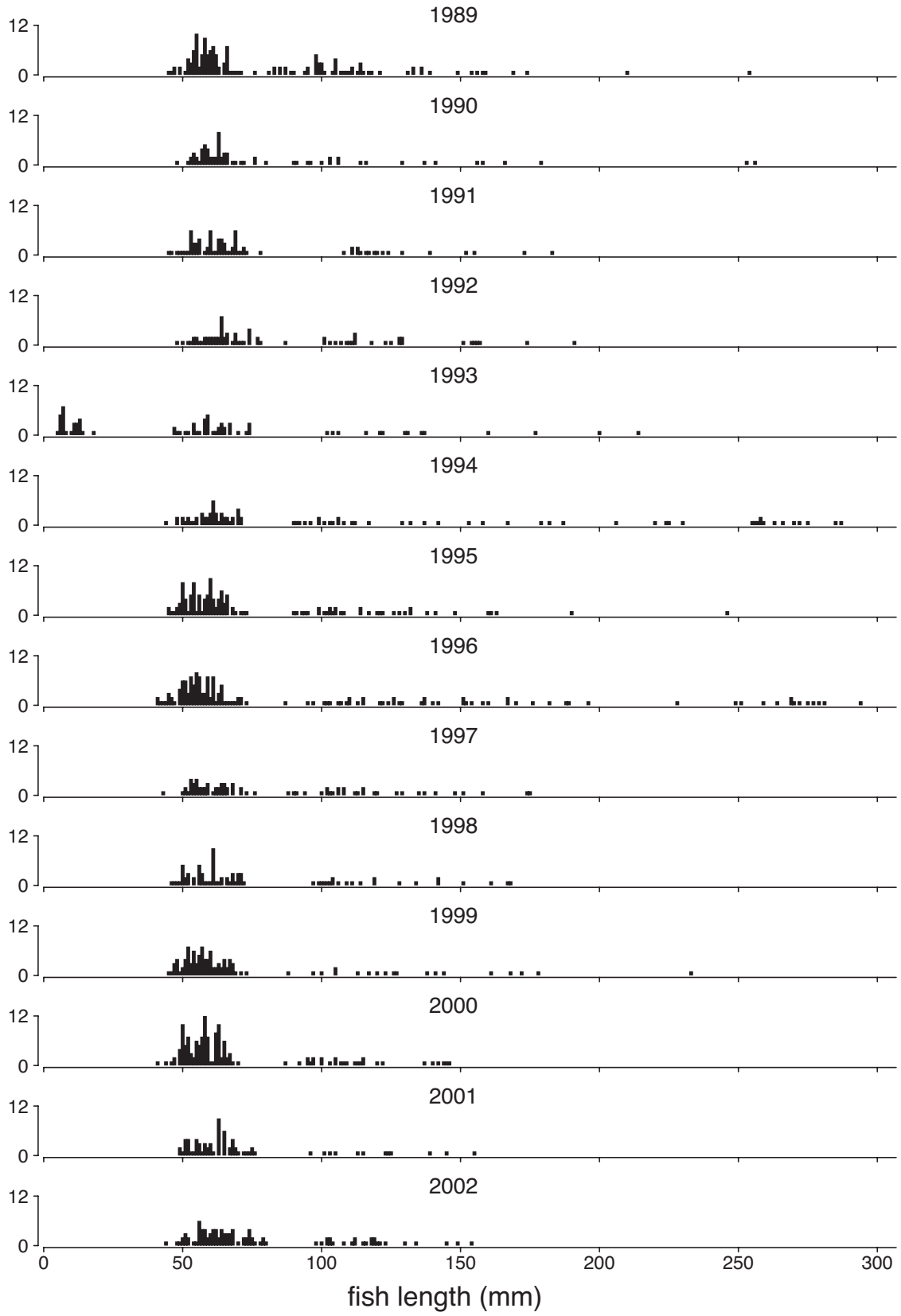
Brown trout (*Salmo trutta*) density.

0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



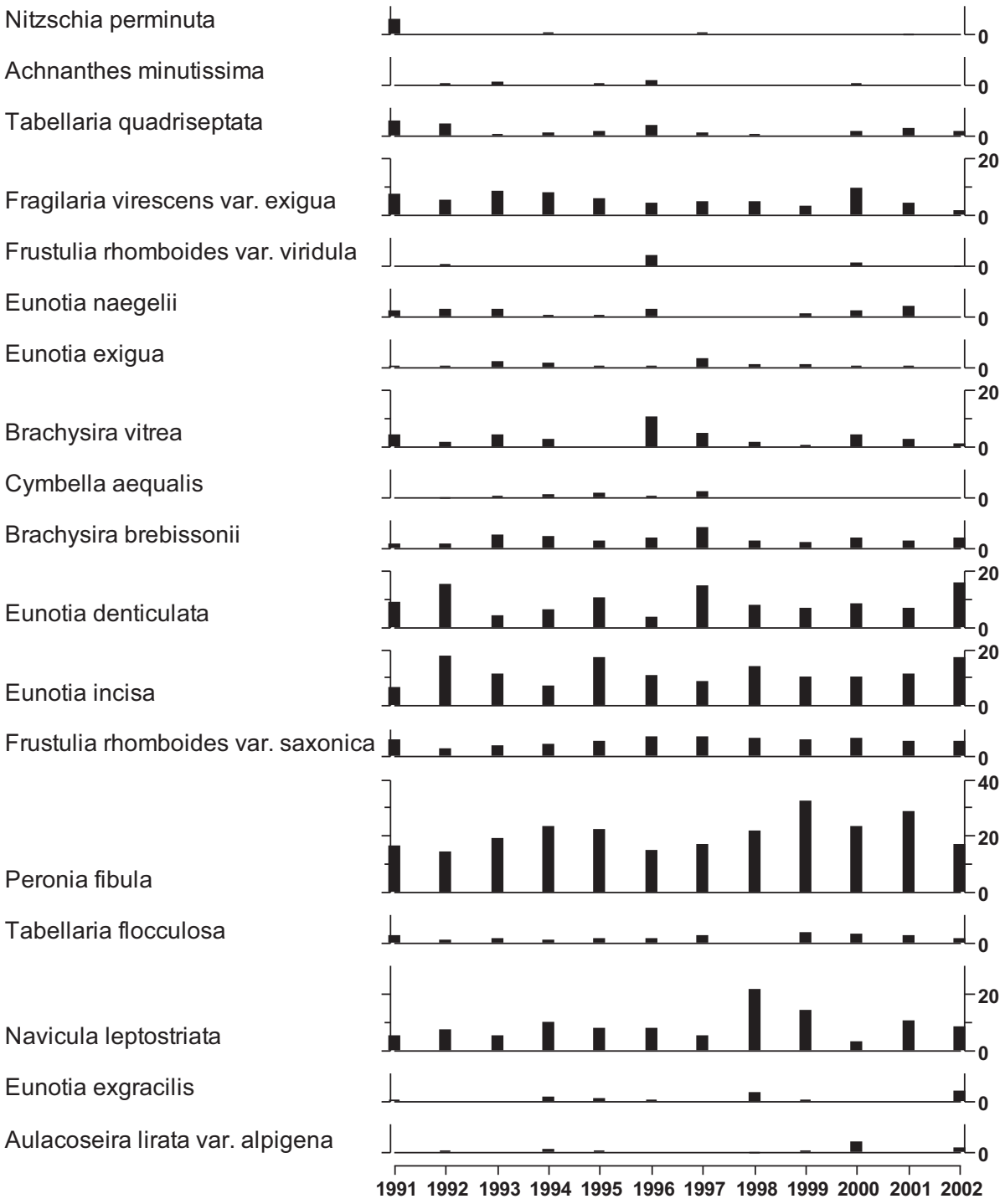
16.5b Llyn Cwm Mynach - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



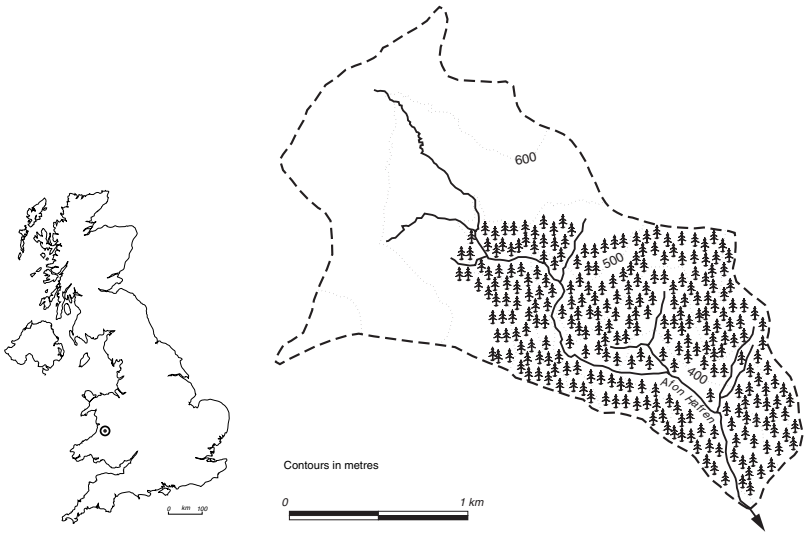
16.6 Llyn Cwm Mynach - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

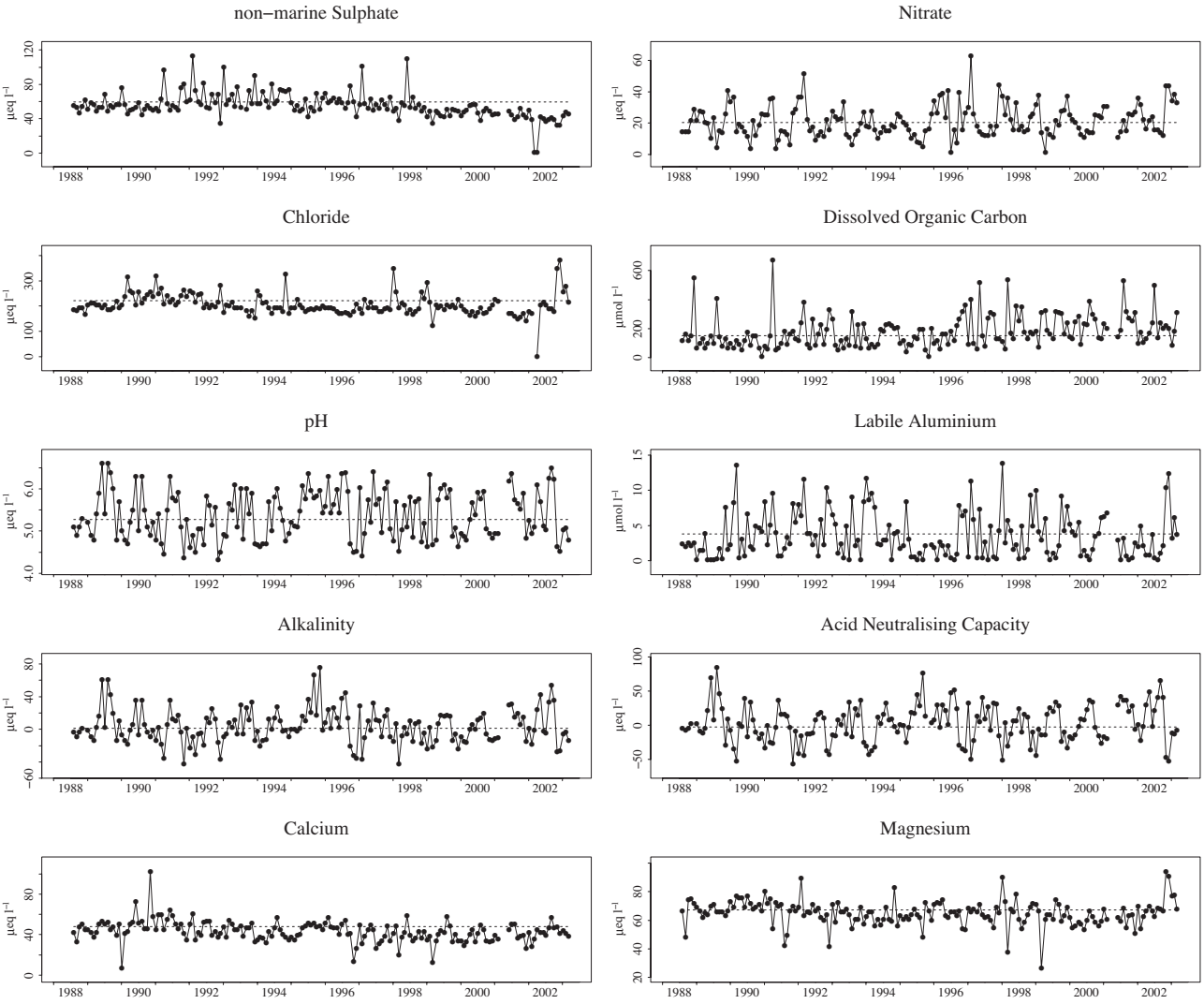


Site 17: Afon Hafren

Grid reference:
SN 844876



17.1a Time series for key chemical determinands



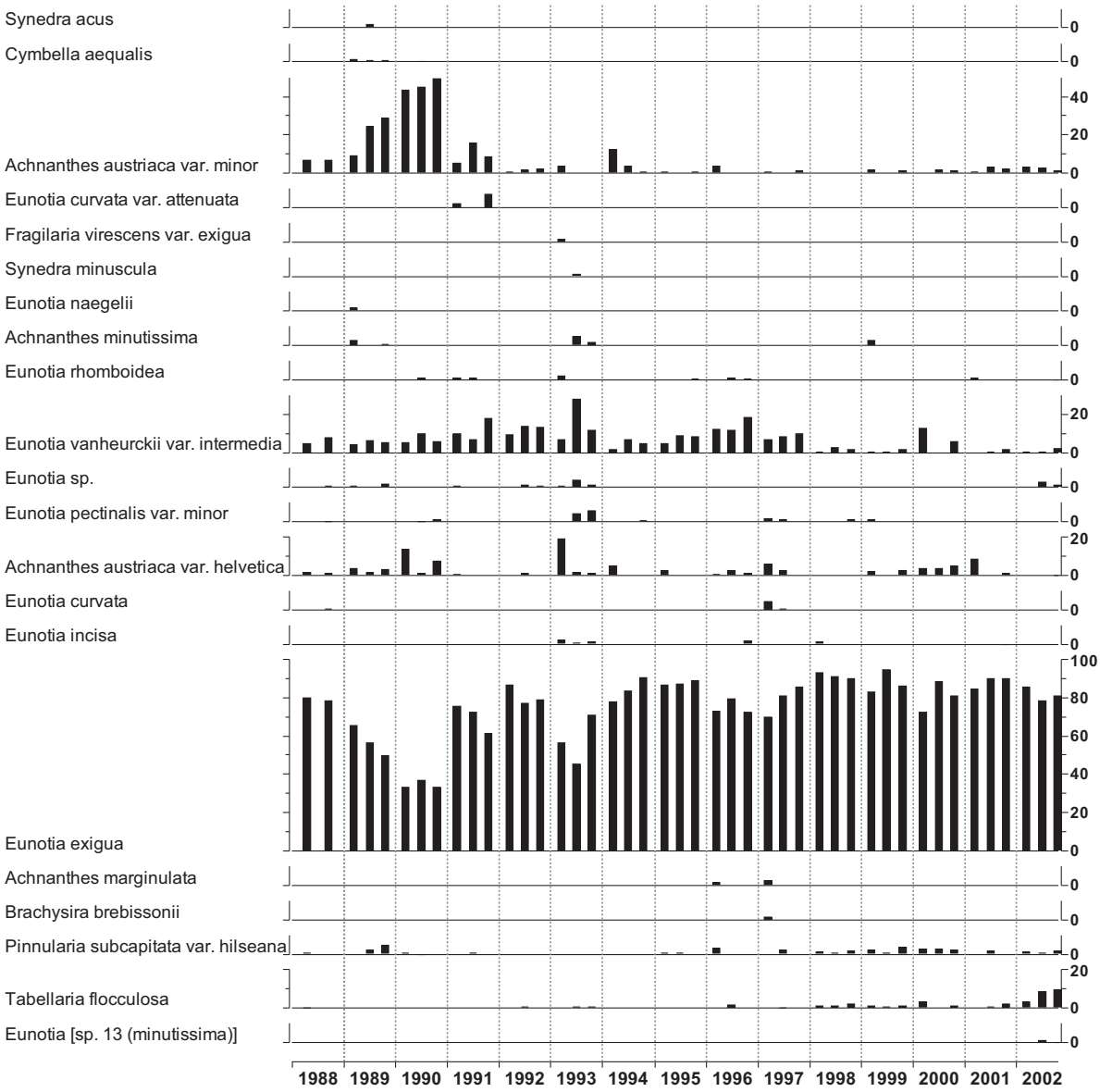
17.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS cm^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Aug 1988 - Mar 1993	mean	59.5	20.4	222.1	5.27	1.1	-13.8	41.5	48.0	66.5	201.1	3.2	172.4	103.4	1.8
	st. dev	13.9	9.9	32.7	0.58	21.0	23.5	10.6	12.0	8.2	17.3	2.1	113.0	86.7	1.4
	min	35.2	3.6	166.4	4.31	-42.6	-57.1	34.0	7.0	41.1	174.0	2.6	5.0	2.5	0.1
	max	113.4	51.4	318.8	6.60	60.9	19.4	112.0	102.3	88.0	252.3	15.3	489.0	366.0	8.1
Apr 1993 - Mar 1998	mean	60.6	20.6	197.7	5.46	7.2	4.9	34.9	41.9	63.1	183.1	3.4	172.6	94.9	2.0
	st. dev	11.3	11.3	33.3	0.57	22.3	27.6	7.4	8.7	7.5	22.7	1.5	124.4	92.7	1.3
	min	38.1	1.3	152.3	4.40	-42.0	-51.1	20.0	13.0	37.0	134.9	2.3	27.0	2.5	0.1
	max	100.8	62.9	349.8	6.41	75.6	76.9	52.0	56.9	88.8	304.5	10.2	550.0	372.0	6.4
Apr 1998 - Mar 2003	mean	46.3	22.3	196.3	5.37	1.6	3.9	30.3	39.8	63.3	184.8	4.8	185.2	91.0	2.6
	st. dev	13.6	9.1	52.0	0.55	18.3	26.3	7.1	7.8	9.5	25.8	2.0	91.9	79.8	1.1
	min	1.8	1.3	2.8	4.52	-27.6	-52.1	20.0	12.0	26.3	113.1	1.5	40.0	2.5	0.8
	max	109.4	43.6	383.7	6.49	53.6	64.8	58.0	58.4	93.0	295.8	11.8	425.0	332.0	6.3

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

17.2 Afon Hafren - epilithic diatom data

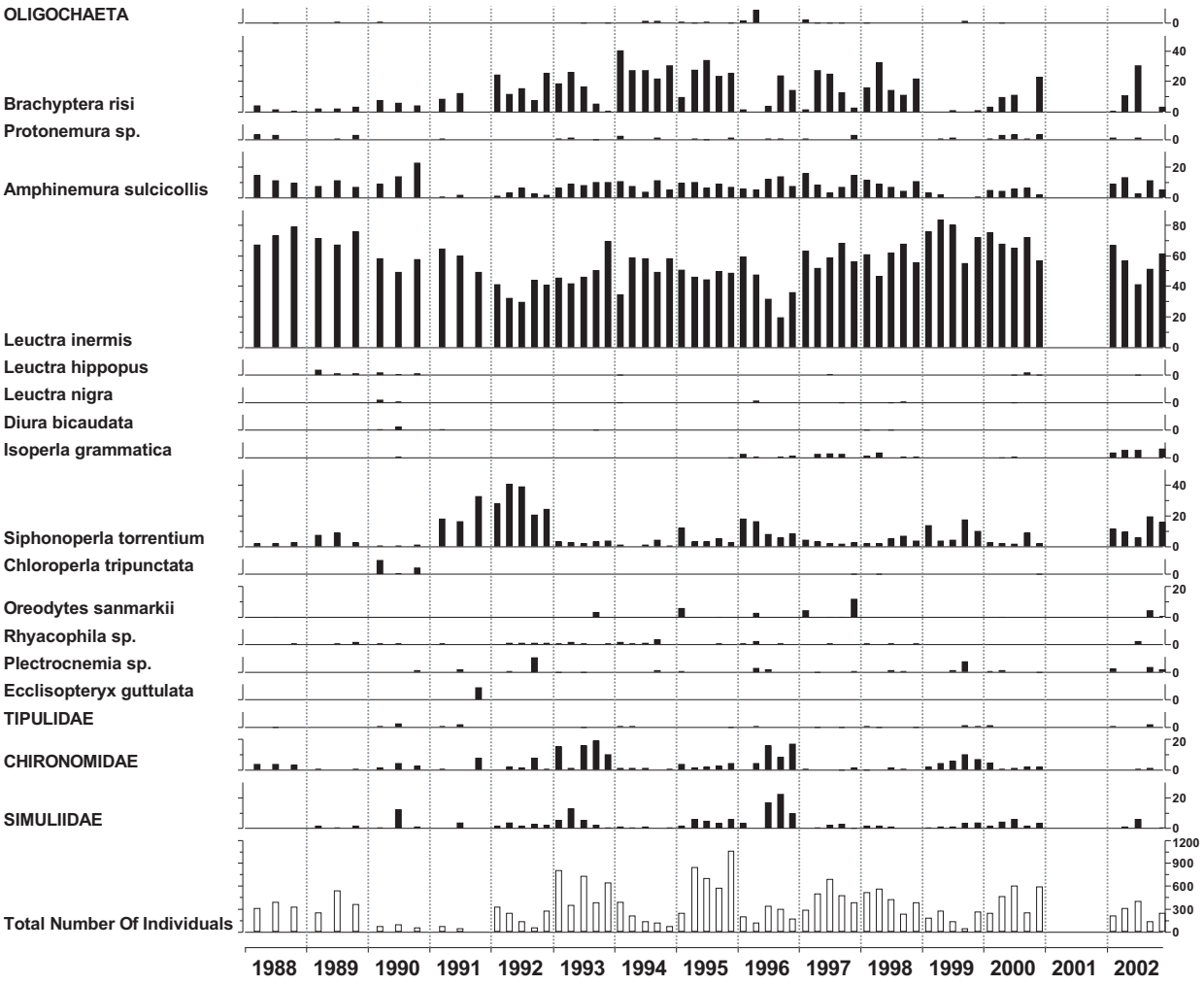
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



17.3 Afon Hafren - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

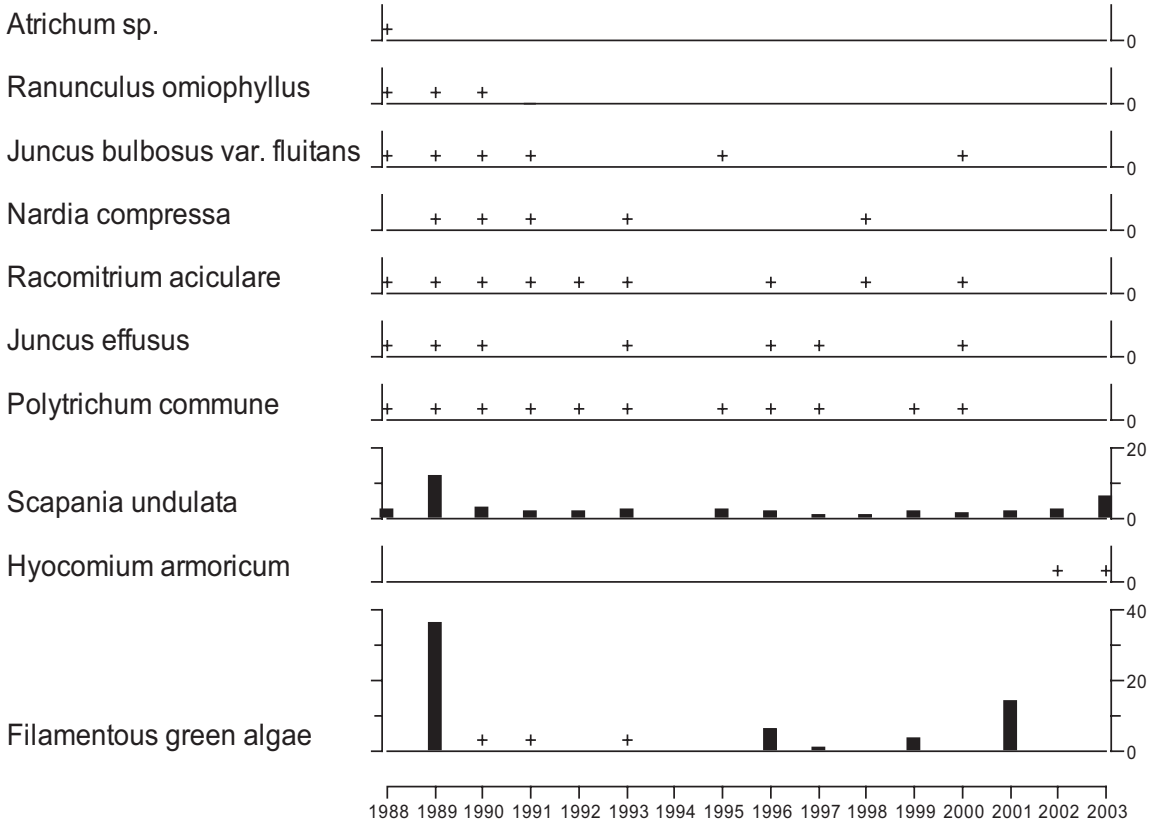
no data for 2001



17.4 Afon Hafren - aquatic macrophyte data

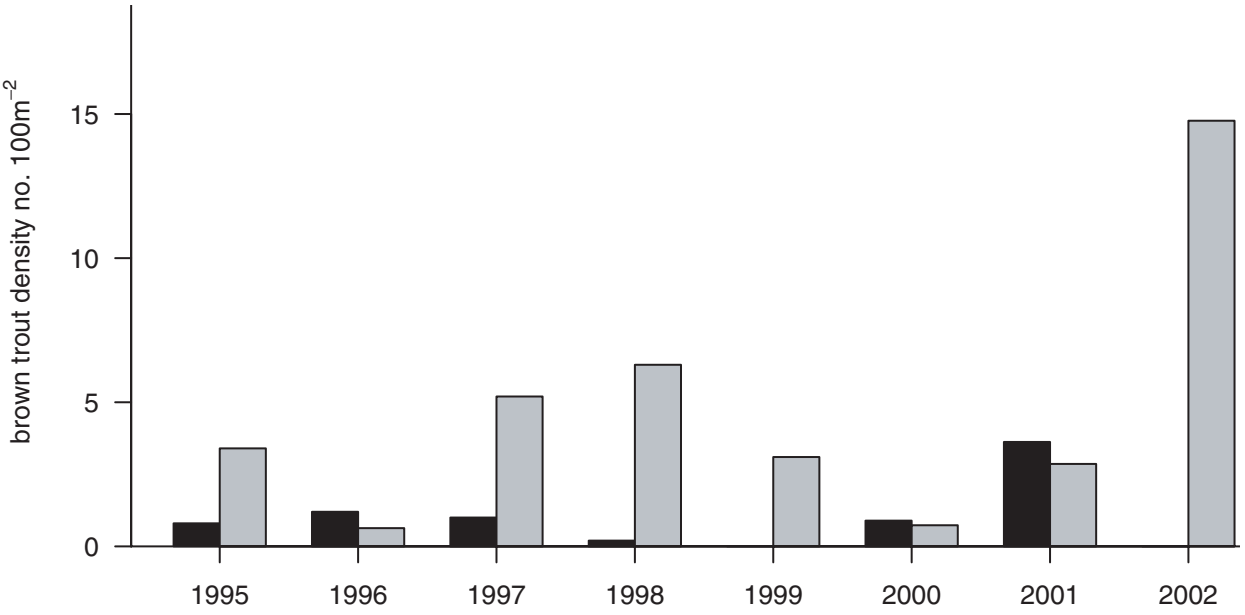
percentage cover estimates for 50 m survery stretch

no data for 1994



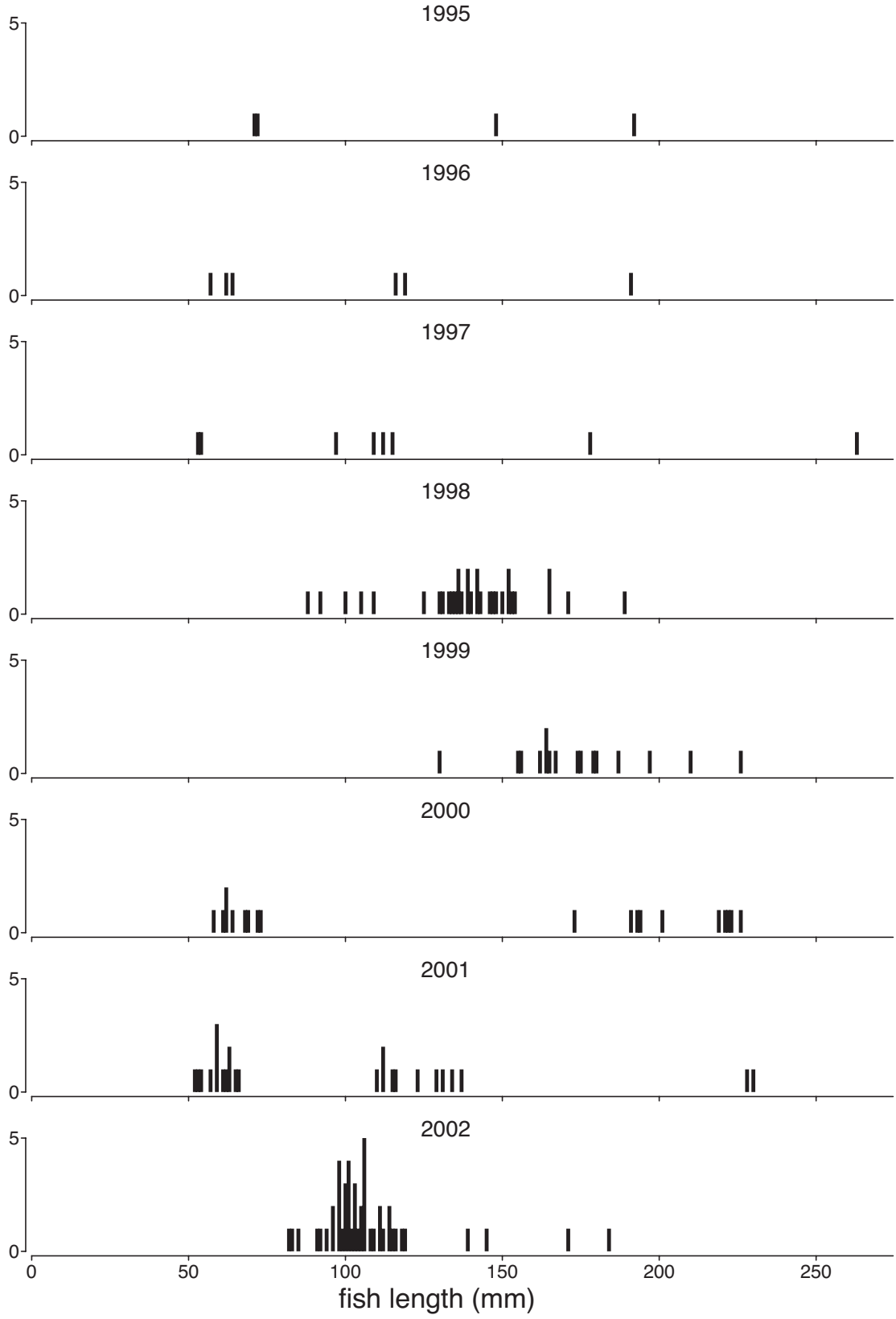
17.5a Afon Hafren - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



17.5b Afon Hafren - salmonid data

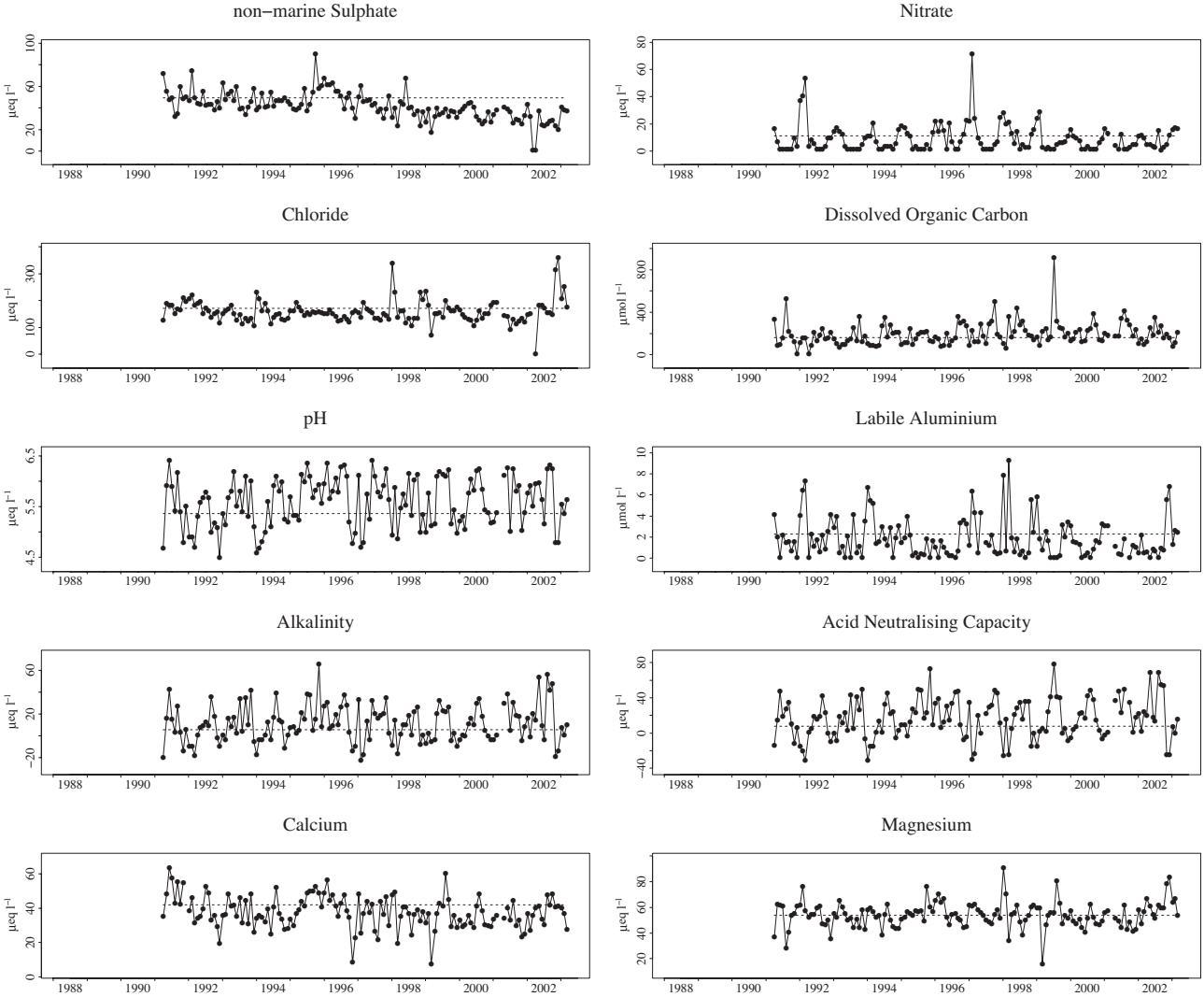
Brown trout (*Salmo trutta*) length frequency summaries



Site 18: Afon Gwy

Grid reference:
SN 842854

18.1a Time series for key chemical determinands



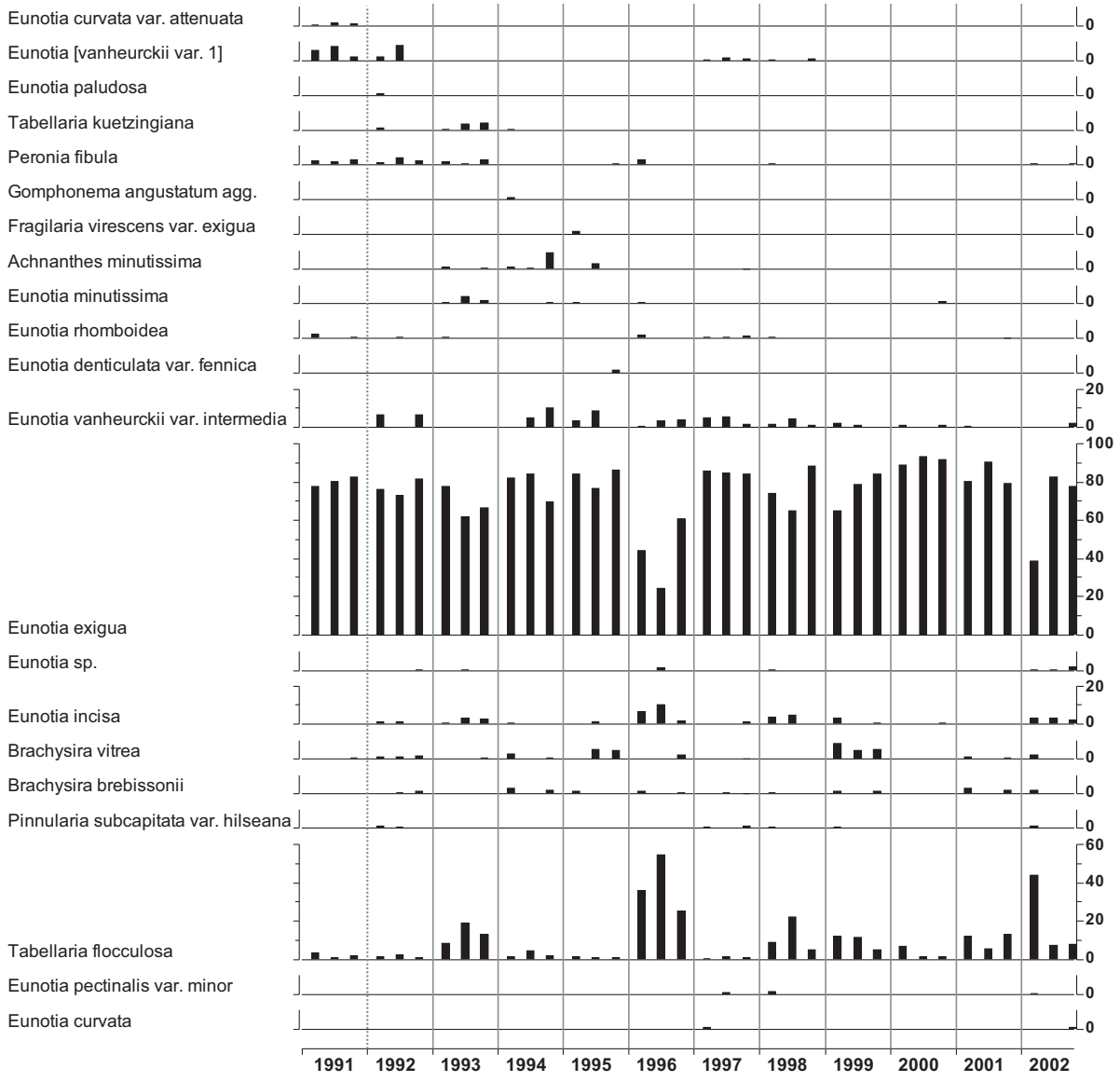
18.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Apr 1991 - Mar 1993	mean	49.4	11.0	170.8	5.36	5.8	8.0	30.3	41.8	53.0	153.7	4.0	115.6	61.2	1.9
	st. dev	10.4	13.9	26.3	0.49	15.7	20.1	4.5	10.6	10.5	17.8	3.3	72.5	51.8	1.3
	min	32.3	1.3	115.7	4.50	-19.5	-31.4	24.0	19.5	28.0	113.1	2.6	5.0	2.5	0.1
	max	75.0	53.6	220.0	6.40	42.3	48.0	44.1	63.4	75.7	195.8	16.4	256.0	198.0	6.3
Apr 1993 - Mar 1998	mean	47.3	10.0	154.1	5.63	12.5	16.7	26.3	38.3	53.9	143.3	3.3	110.9	54.1	2.2
	st. dev	10.9	11.4	35.0	0.50	17.6	23.0	6.8	9.5	9.0	19.9	2.4	70.0	56.0	1.1
	min	23.1	1.3	104.4	4.58	-22.6	-31.3	16.0	8.5	33.7	113.1	0.6	24.0	2.5	0.7
	max	90.0	71.4	338.5	6.40	65.4	73.1	44.0	56.4	89.7	239.3	16.1	366.0	249.0	6.0
Apr 1998 - Mar 2003	mean	33.5	7.5	158.6	5.63	12.3	19.6	22.0	35.3	53.5	145.1	3.0	109.6	42.4	2.7
	st. dev	10.0	6.3	52.6	0.45	16.9	23.3	6.9	7.8	10.3	29.5	2.3	46.6	42.1	1.5
	min	1.8	0.5	2.8	4.78	-18.6	-25.2	13.0	7.5	15.6	69.6	0.6	34.5	2.5	1.0
	max	67.1	29.3	361.1	6.32	56.4	78.1	49.0	59.9	82.3	274.1	12.0	235.0	183.0	11.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20ºC);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

18.2 Afon Gwy - epilithic diatom data

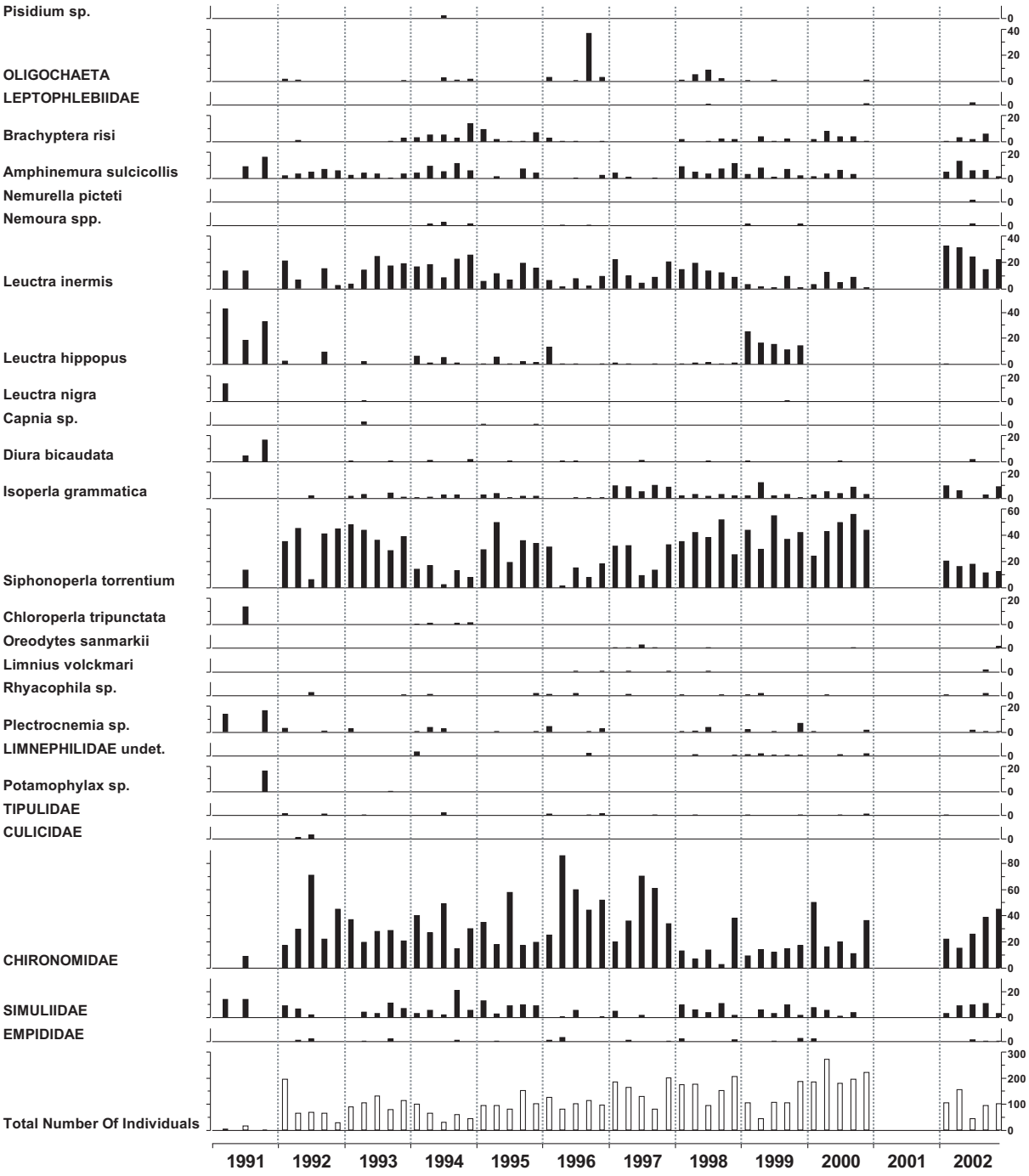
percentage frequency of all taxa in all summer samples with a minimum abundance >2%



18.3 Afon Gwy - macroinvertebrate data

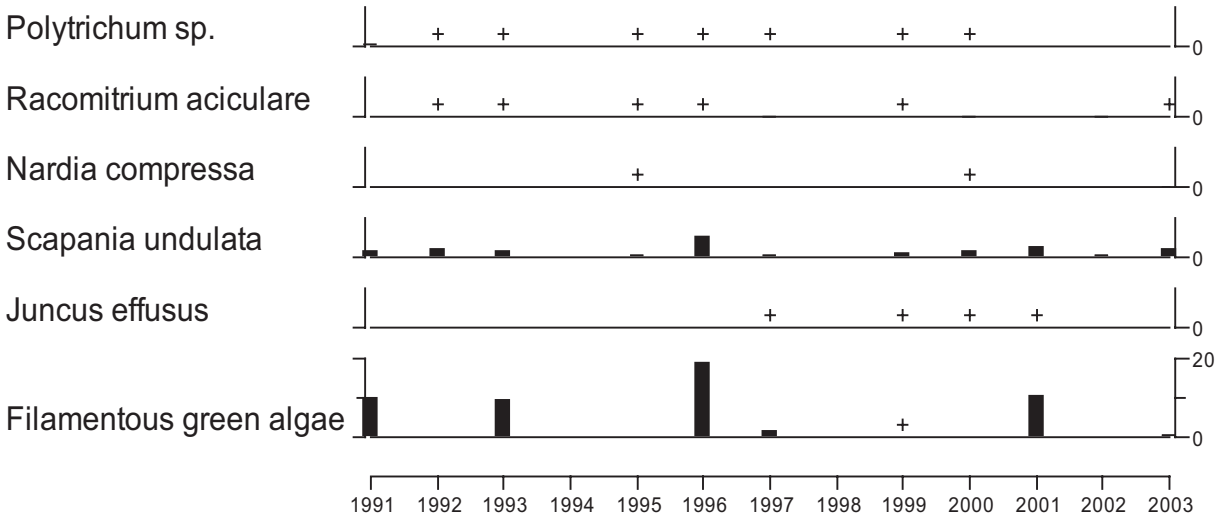
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%

no data for 2001



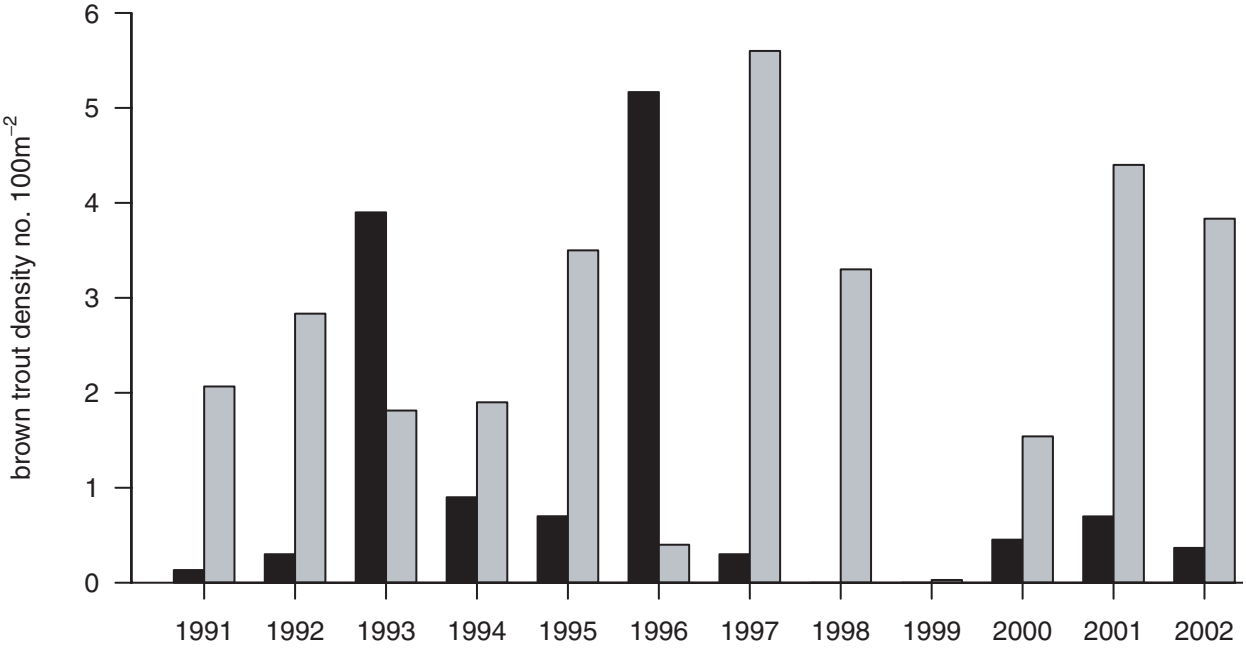
18.4 Afon Gwy - aquatic macrophyte data

percentage cover estimates for 50 m survery stretch



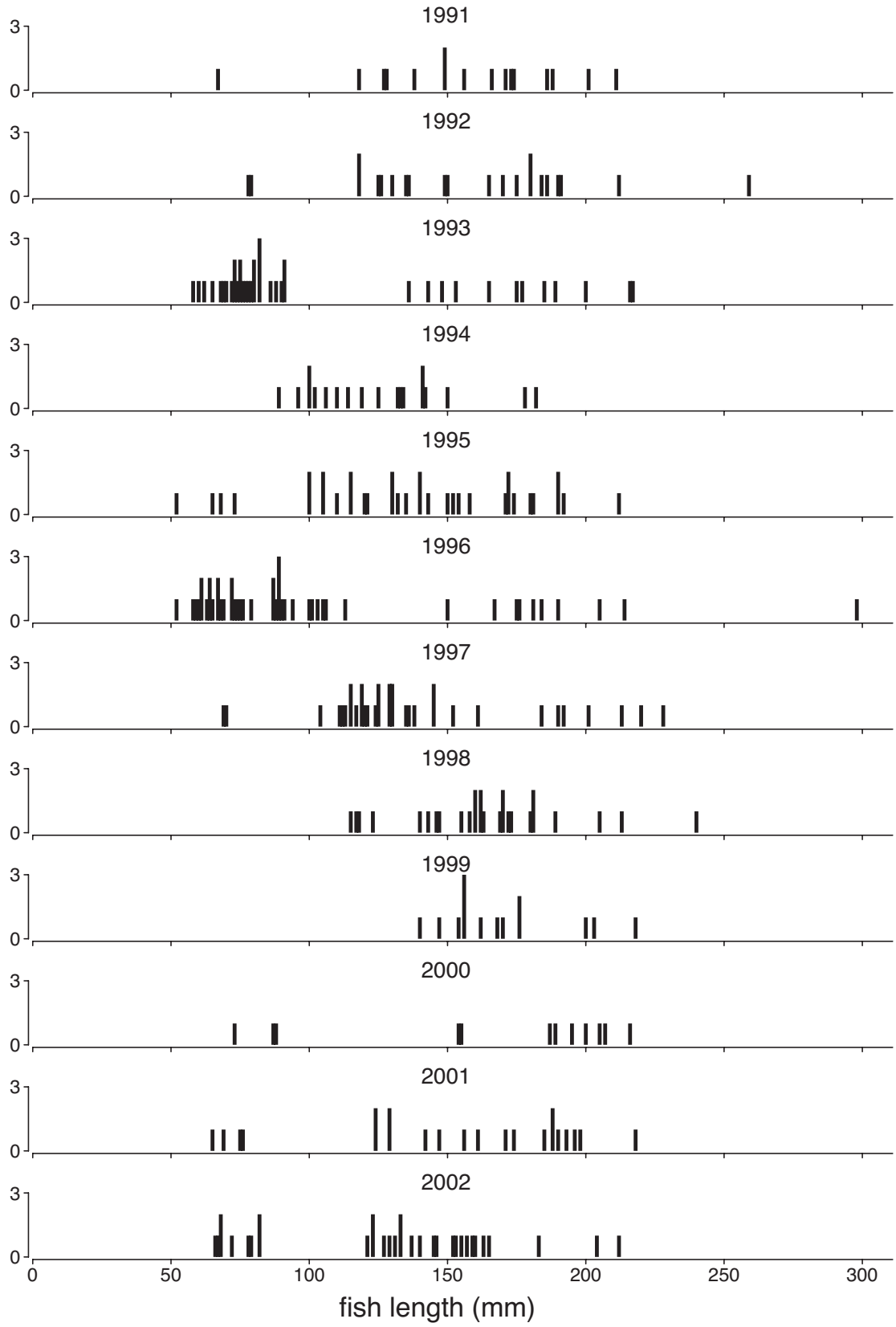
18.5a Afon Gwy - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



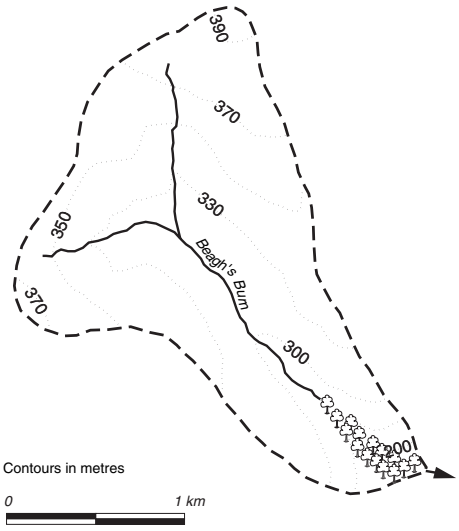
18.5b Afon Gwy - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

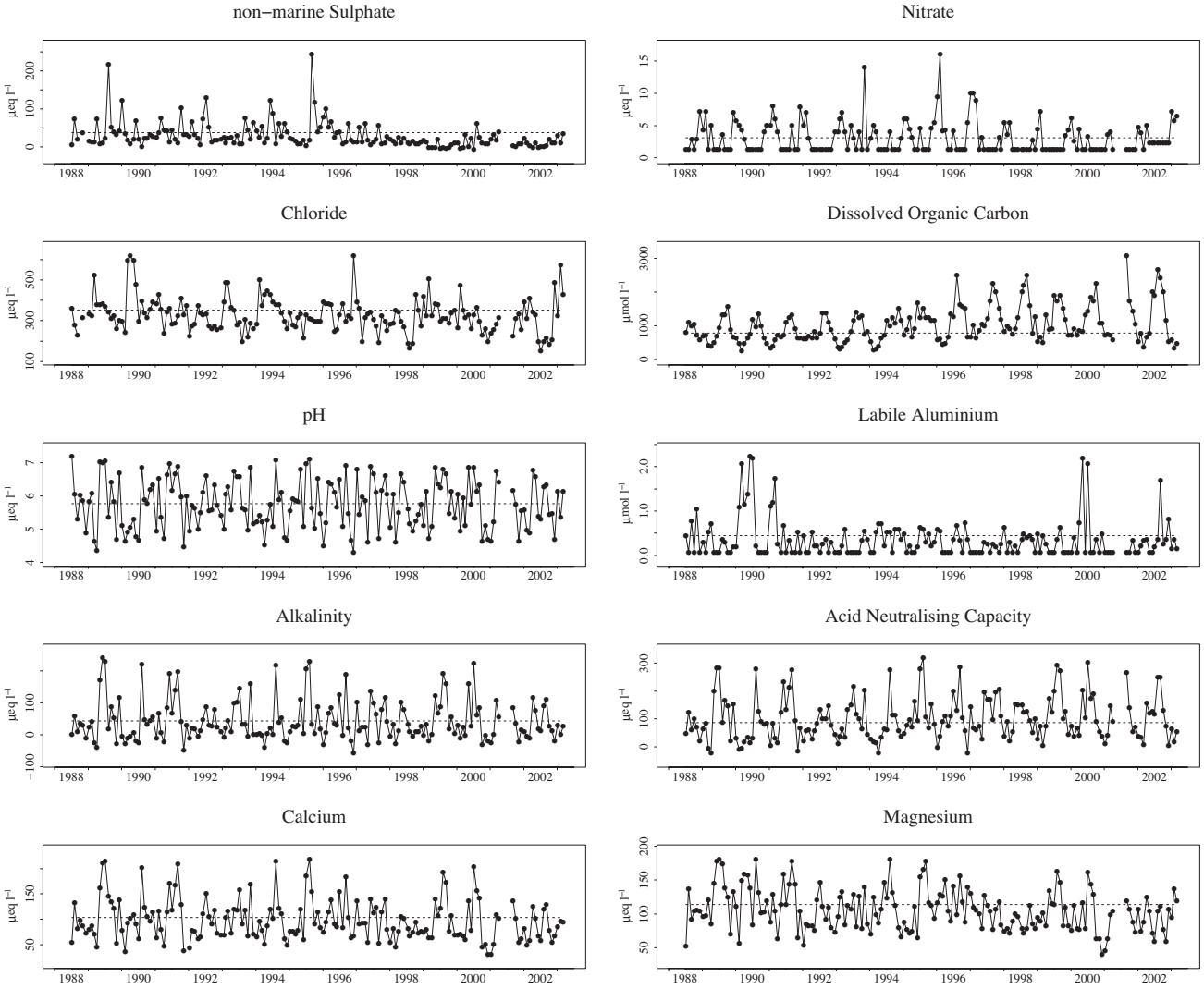


Site 19: Beaghs Burn

Grid reference:
D 173297



19.1a Time series for key chemical determinands



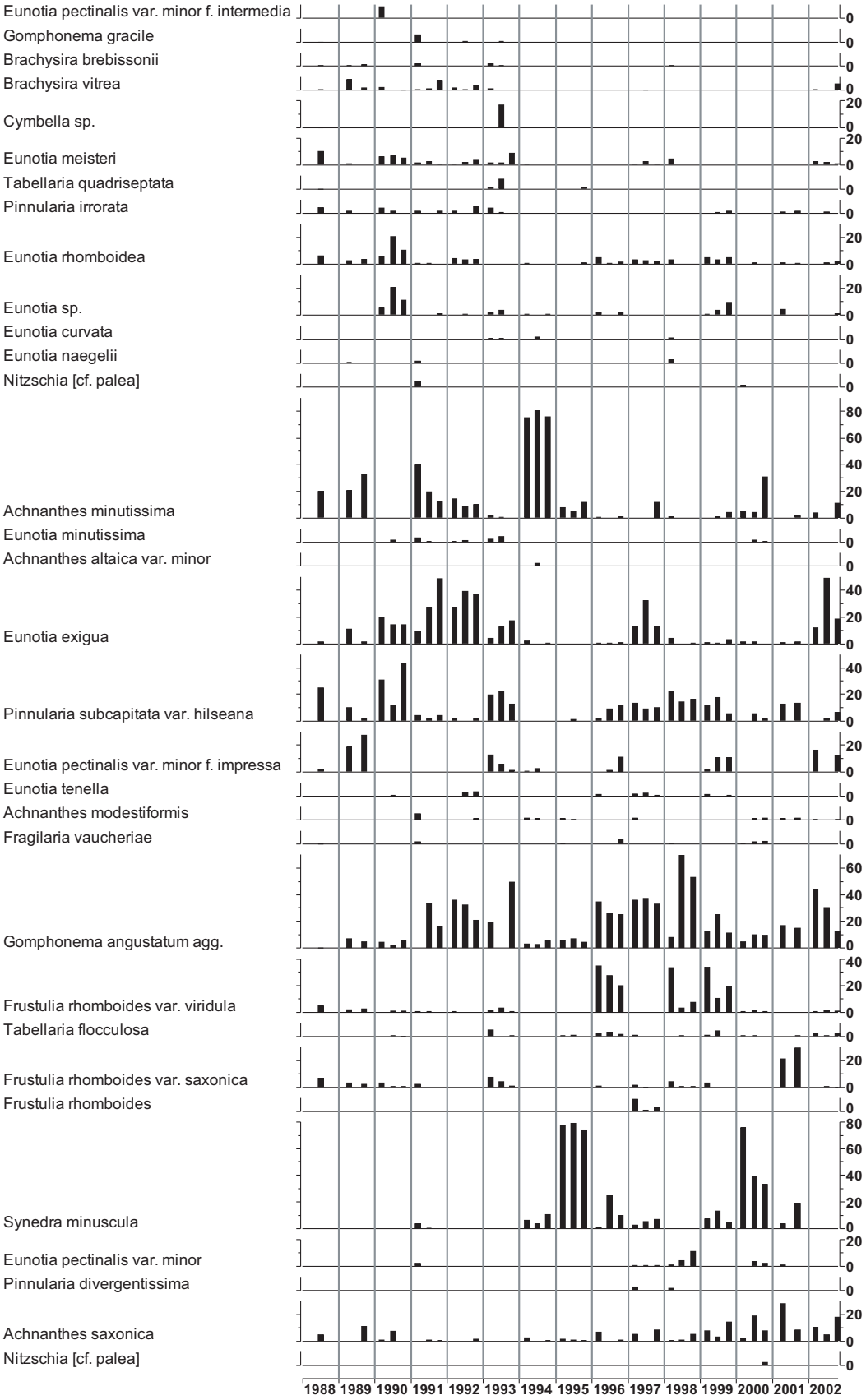
19.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988	mean	38.4	3.1	351.0	5.76	43.9	87.0	60.3	103.0	112.5	306.9	11.3	57.7	12.0	9.4
- Mar 1993	st. dev	36.7	2.2	89.8	0.77	69.3	78.1	11.9	44.0	33.6	53.3	3.7	21.8	15.2	3.8
	min	0.3	1.3	225.7	4.36	-49.0	-21.4	43.0	35.4	51.0	204.5	2.6	2.0	2.0	3.1
	max	216.4	8.0	617.8	7.18	240.0	283.8	88.0	214.6	178.5	443.7	23.0	106.0	60.0	18.9
Apr 1993	mean	37.7	3.6	324.4	5.75	45.0	104.7	58.6	101.8	107.0	297.8	10.5	53.5	7.9	12.7
- Mar 1998	st. dev	39.2	3.2	73.1	0.77	66.5	76.4	10.7	40.1	28.2	45.3	3.7	18.3	6.0	5.5
	min	3.4	1.3	191.8	4.31	-58.0	-22.7	39.0	44.9	63.3	221.9	2.6	20.0	2.0	3.3
	max	243.1	16.0	620.6	7.12	230.0	318.2	96.0	218.1	178.5	408.9	21.5	96.0	20.0	30.0
Apr 1998	mean	11.2	2.3	310.1	5.72	40.5	110.3	52.5	89.7	94.7	269.3	9.6	53.2	8.8	14.8
- Mar 2003	st. dev	13.0	1.7	88.8	0.69	56.6	76.8	11.7	37.5	26.6	48.7	3.4	23.1	12.0	7.9
	min	-7.0	1.3	152.3	4.63	-30.0	5.1	33.0	30.4	39.5	165.3	3.1	13.0	2.0	4.2
	max	61.8	7.4	575.5	6.87	223.0	302.3	92.0	203.6	160.4	374.1	19.4	117.0	59.0	37.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

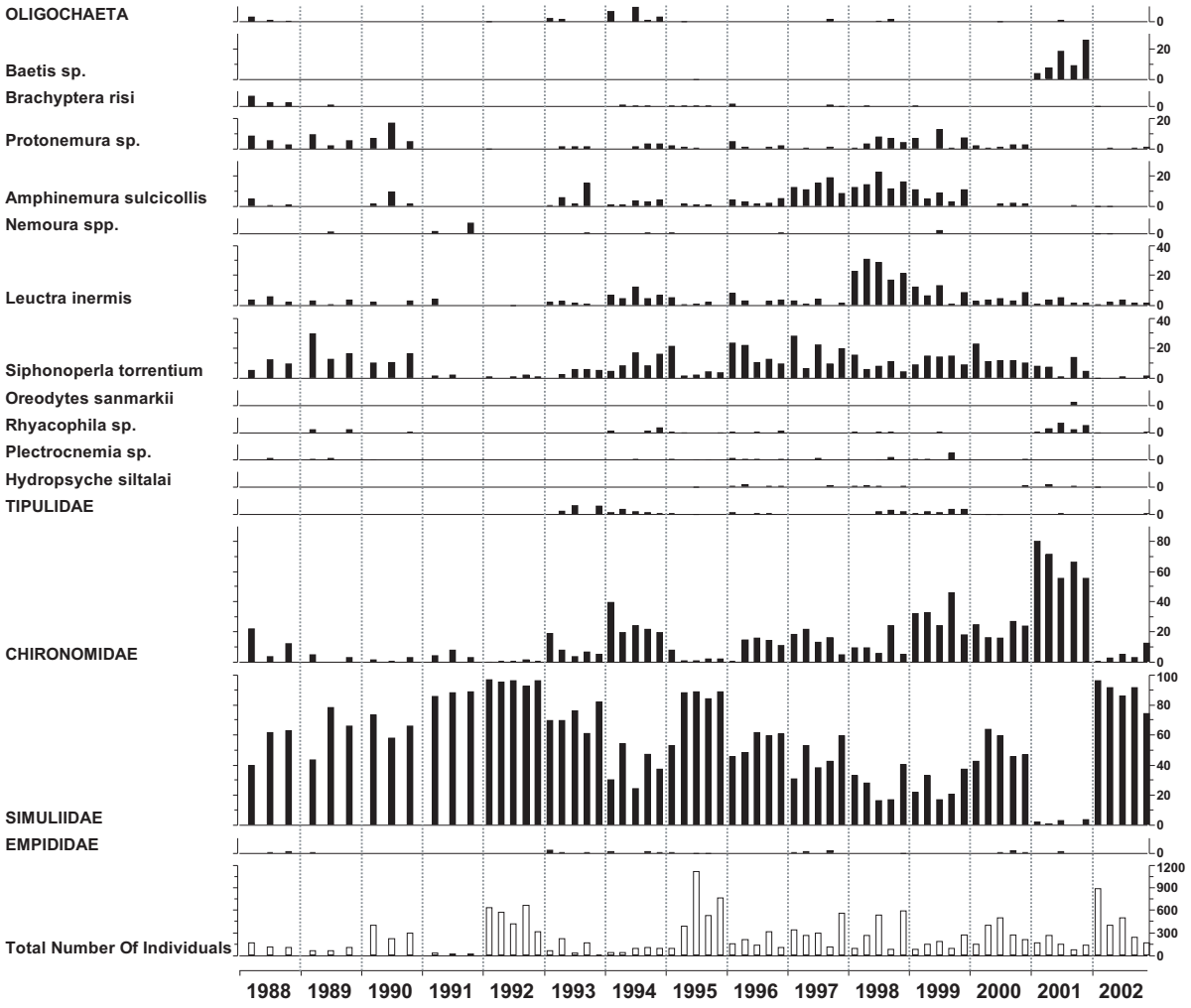
19.2 Beaghs Burn - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



19.3 Beaghs Burn - macroinvertebrate data

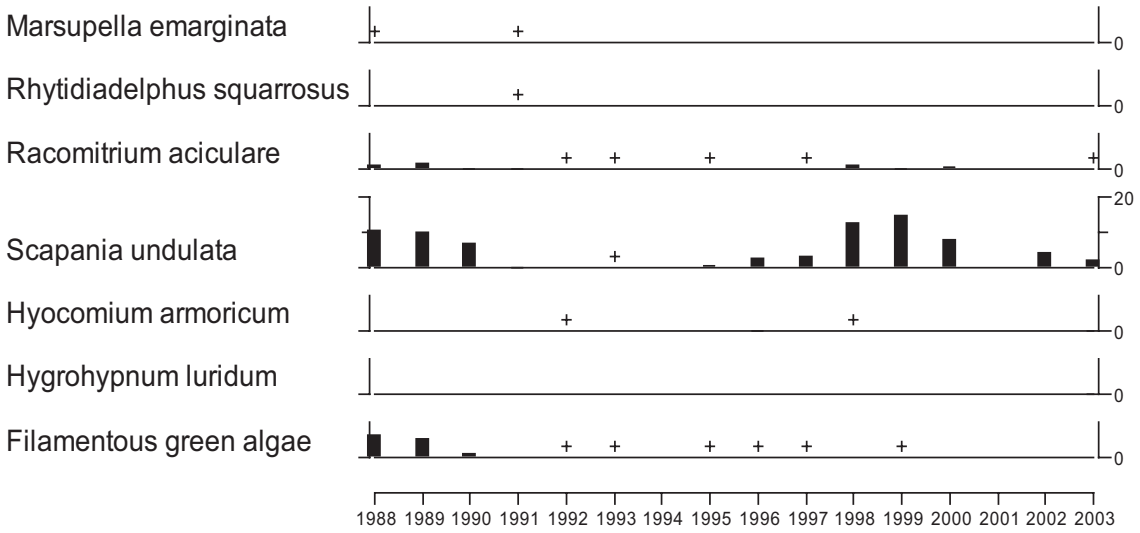
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



19.4 Beaghs Burn - aquatic macrophyte data

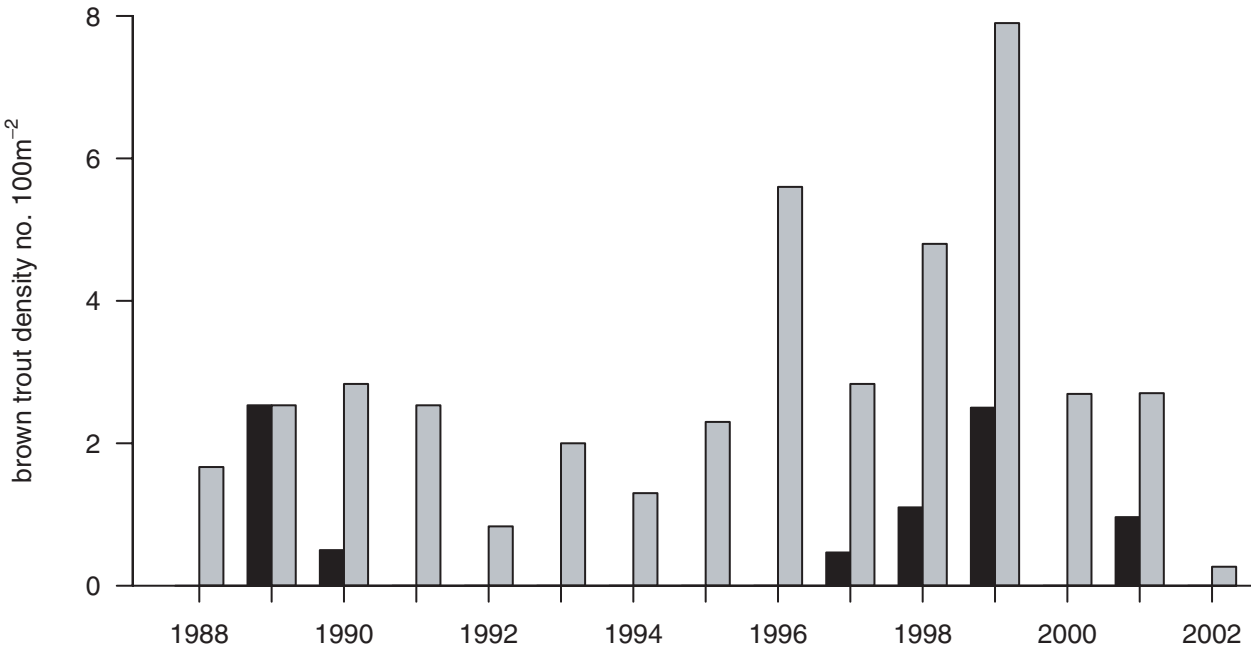
percentage cover estimates for 50 m survery stretch

no data for 1994



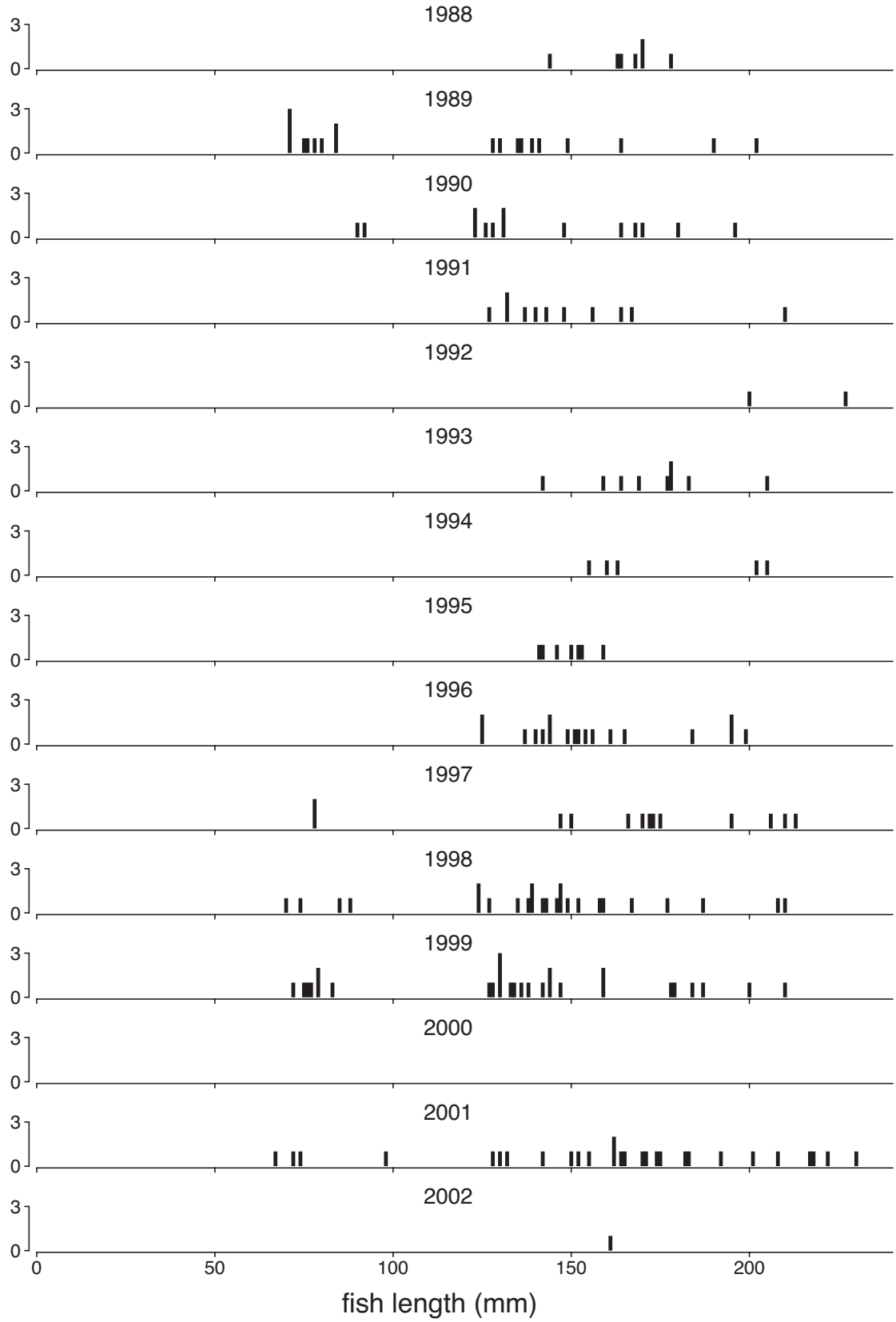
19.5a Beaghs Burn - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



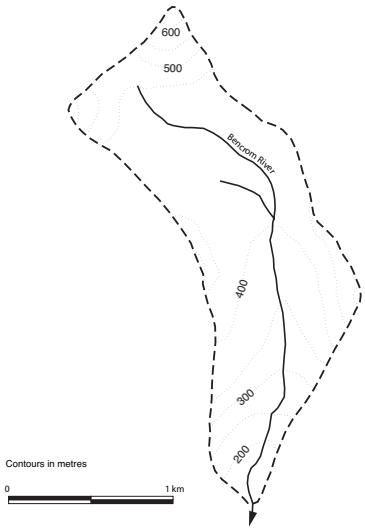
19.5b Beaghs Burn - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

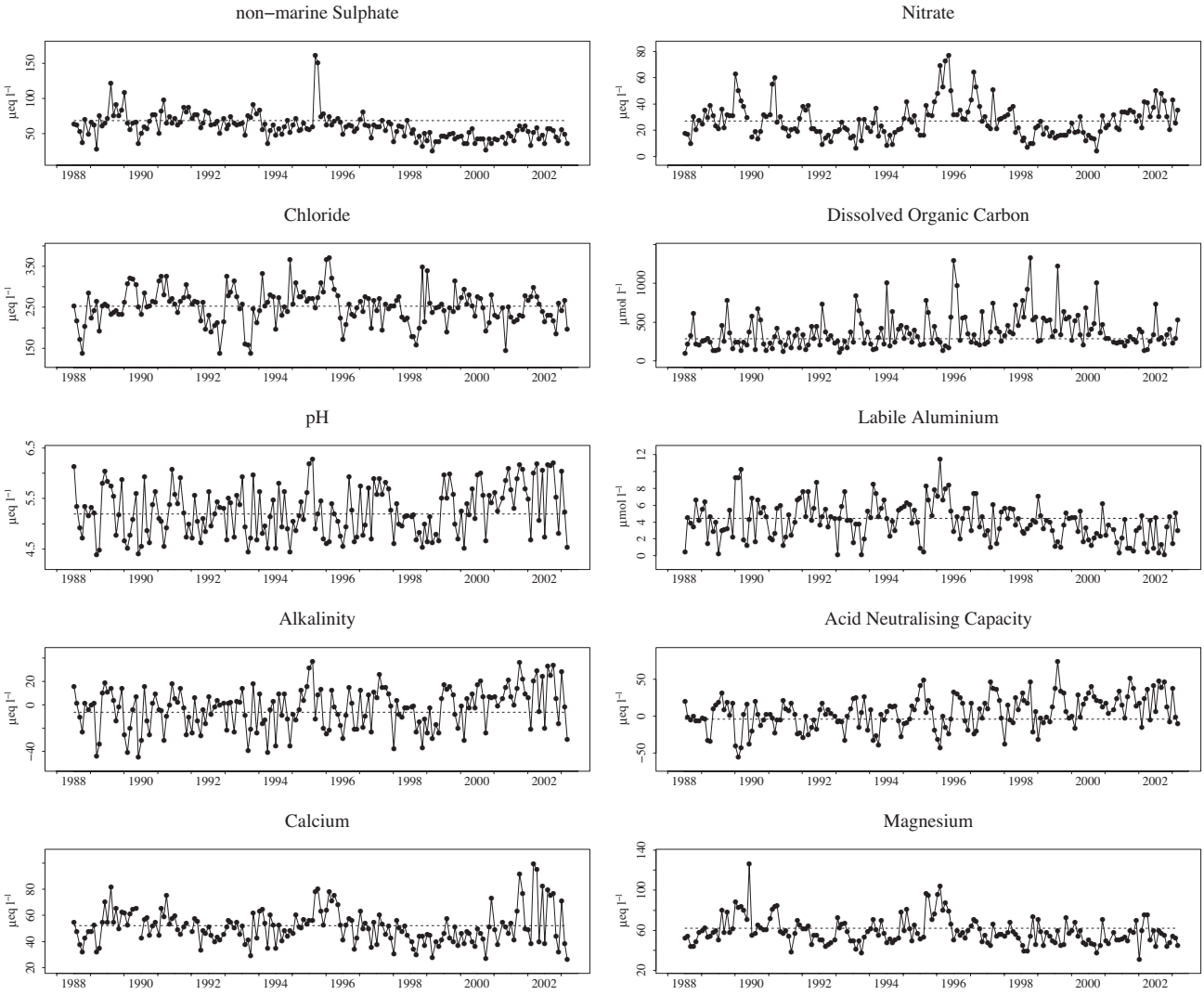


Site 20: Bencrom River

Grid reference:
J 304250



20.1a Time series for key chemical determinands



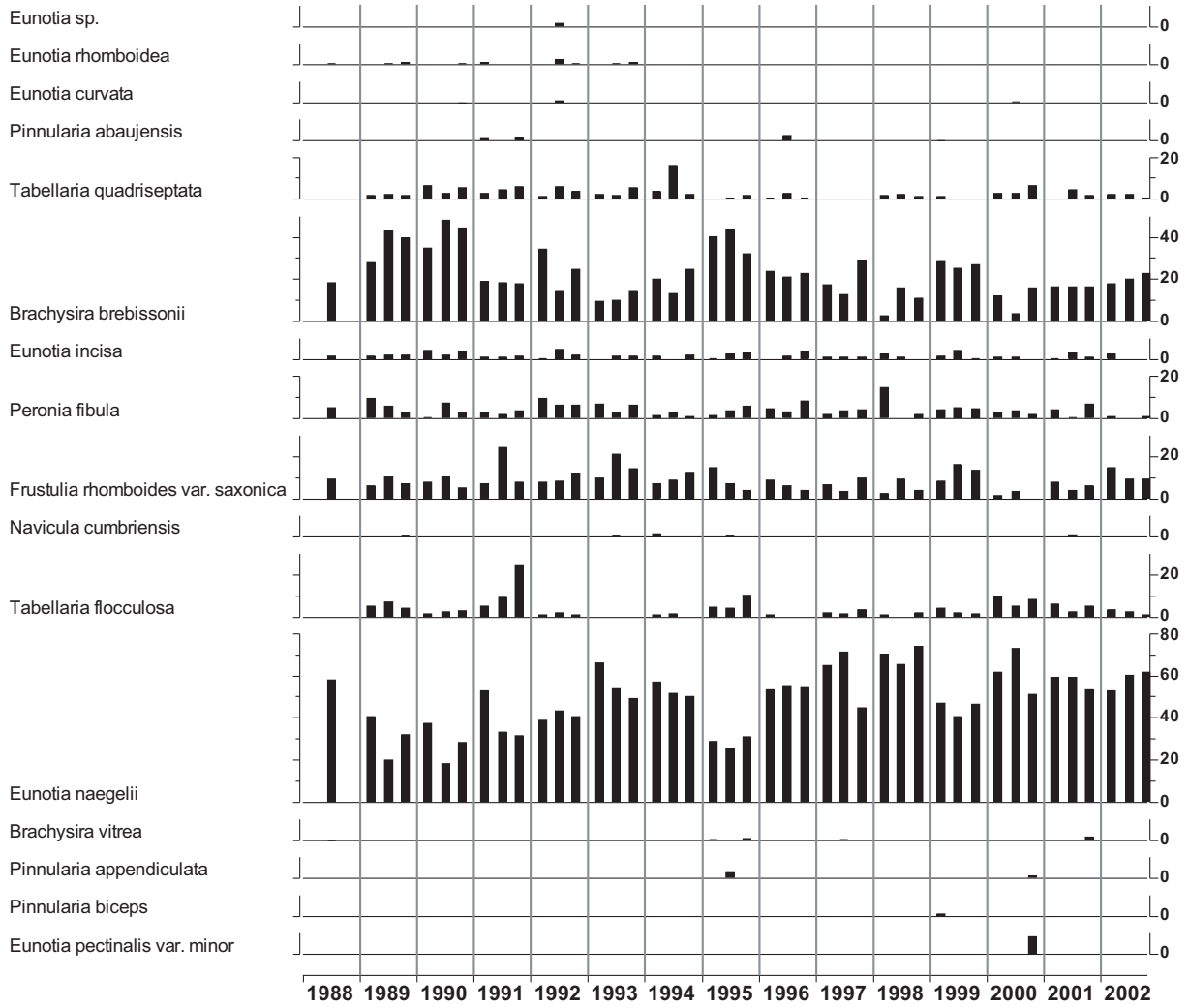
20.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Jul 1988	mean	68.6	26.9	252.7	5.20	-6.7	-3.9	49.5	52.1	61.2	259.9	11.6	199.9	119.7	3.5
- Mar 1993	st. dev	15.8	11.7	42.9	0.47	16.6	18.4	7.1	10.1	14.5	30.5	2.3	88.7	62.1	1.9
	min	28.6	9.0	138.2	4.38	-45.0	-55.6	36.0	32.4	37.8	182.7	6.6	9.0	2.0	1.2
	max	121.4	62.9	327.2	6.13	19.0	32.0	68.0	81.3	125.0	317.6	17.4	390.0	276.0	9.3
Apr 1993	mean	65.1	30.6	259.0	5.19	-4.5	2.5	51.3	52.4	60.9	266.8	11.5	204.2	130.5	4.7
- Mar 1998	st. dev	19.9	15.4	46.0	0.49	18.0	22.4	8.0	11.5	14.0	38.3	3.2	73.7	61.0	2.8
	min	35.2	6.0	138.2	4.44	-41.0	-43.6	36.0	29.4	36.2	178.4	5.4	41.0	2.0	1.6
	max	161.6	77.0	372.4	6.27	37.0	48.8	80.0	80.3	102.8	352.4	25.3	400.0	308.0	15.5
Apr 1998	mean	45.9	24.4	241.6	5.37	1.4	16.3	45.8	49.6	52.8	242.5	10.3	149.4	81.3	5.2
- Mar 2003	st. dev	9.0	10.5	39.2	0.53	18.1	20.8	5.9	16.8	9.5	30.6	2.2	62.5	43.6	2.9
	min	25.3	4.1	143.9	4.52	-37.0	-31.6	35.0	26.4	30.4	165.3	6.1	24.0	5.0	1.6
	max	68.4	50.0	349.8	6.20	36.0	73.8	64.0	99.3	74.0	295.8	15.9	256.0	190.0	16.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

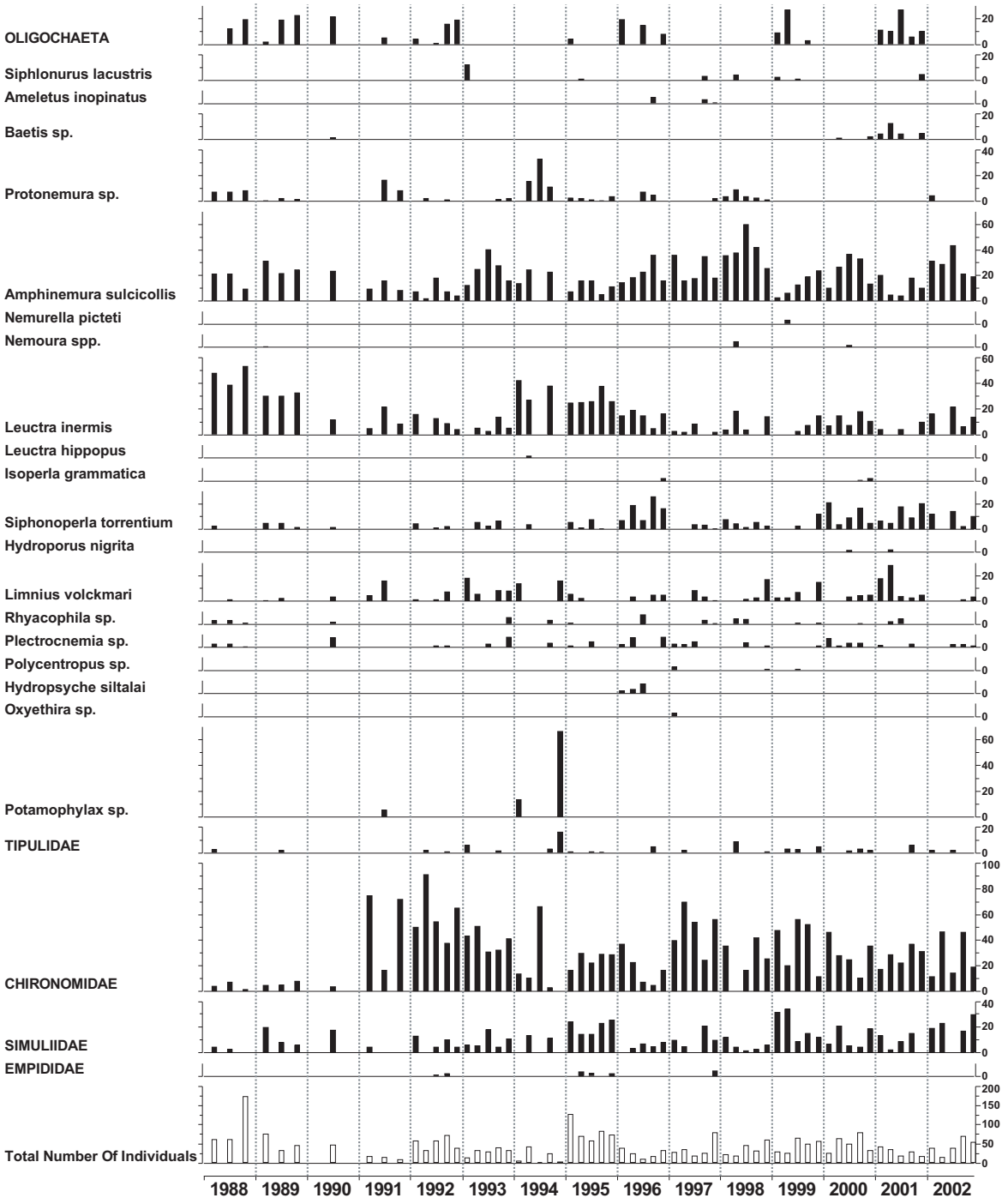
20.2 Bencrom River - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



20.3 Bencrom River - macroinvertebrate data

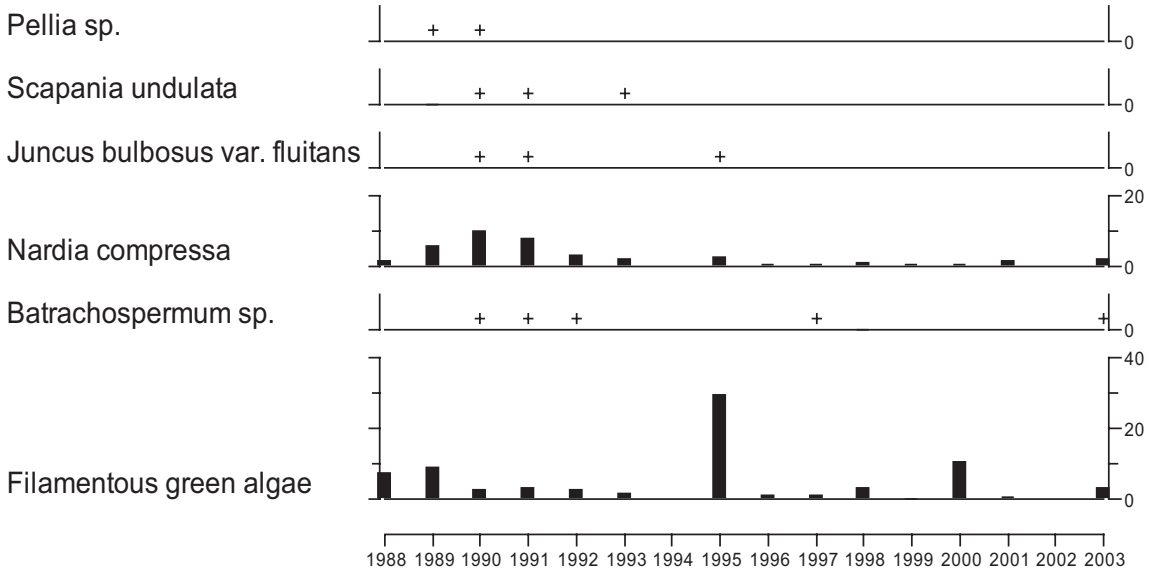
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



20.4 Bencrom River - aquatic macrophyte data

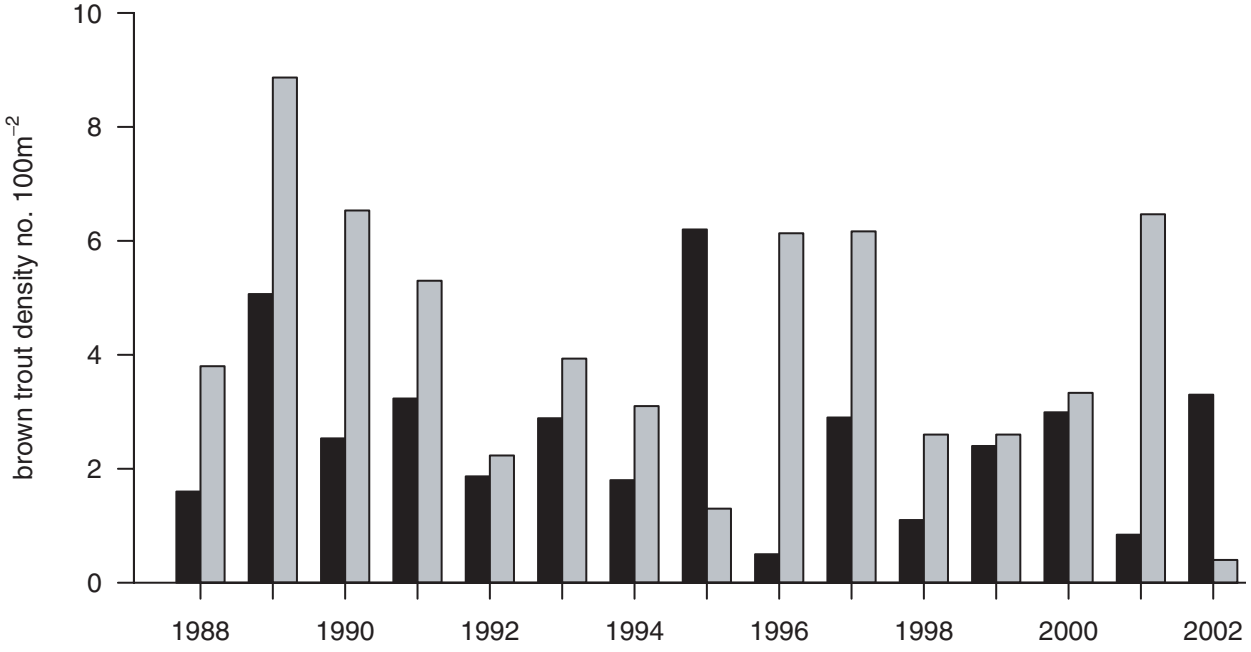
percentage cover estimates for 50 m survery stretch

no data for 1994 and 2002



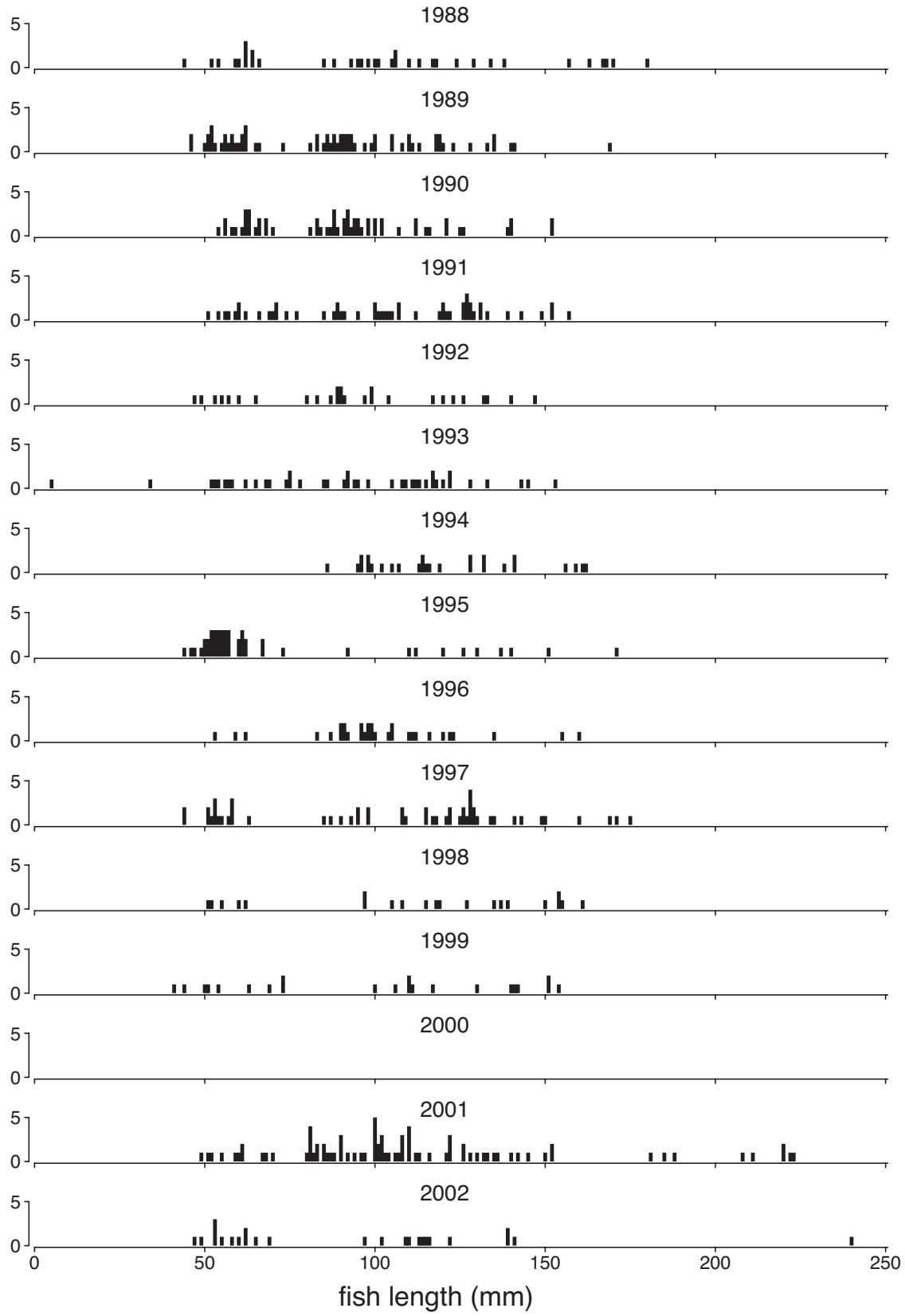
20.5a Bencrom River - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



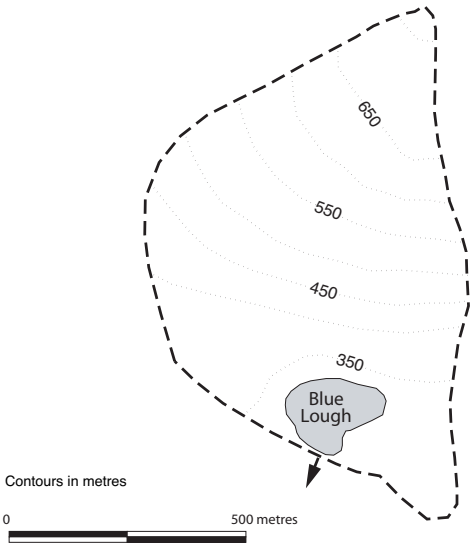
20.5b Bencrom River - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries

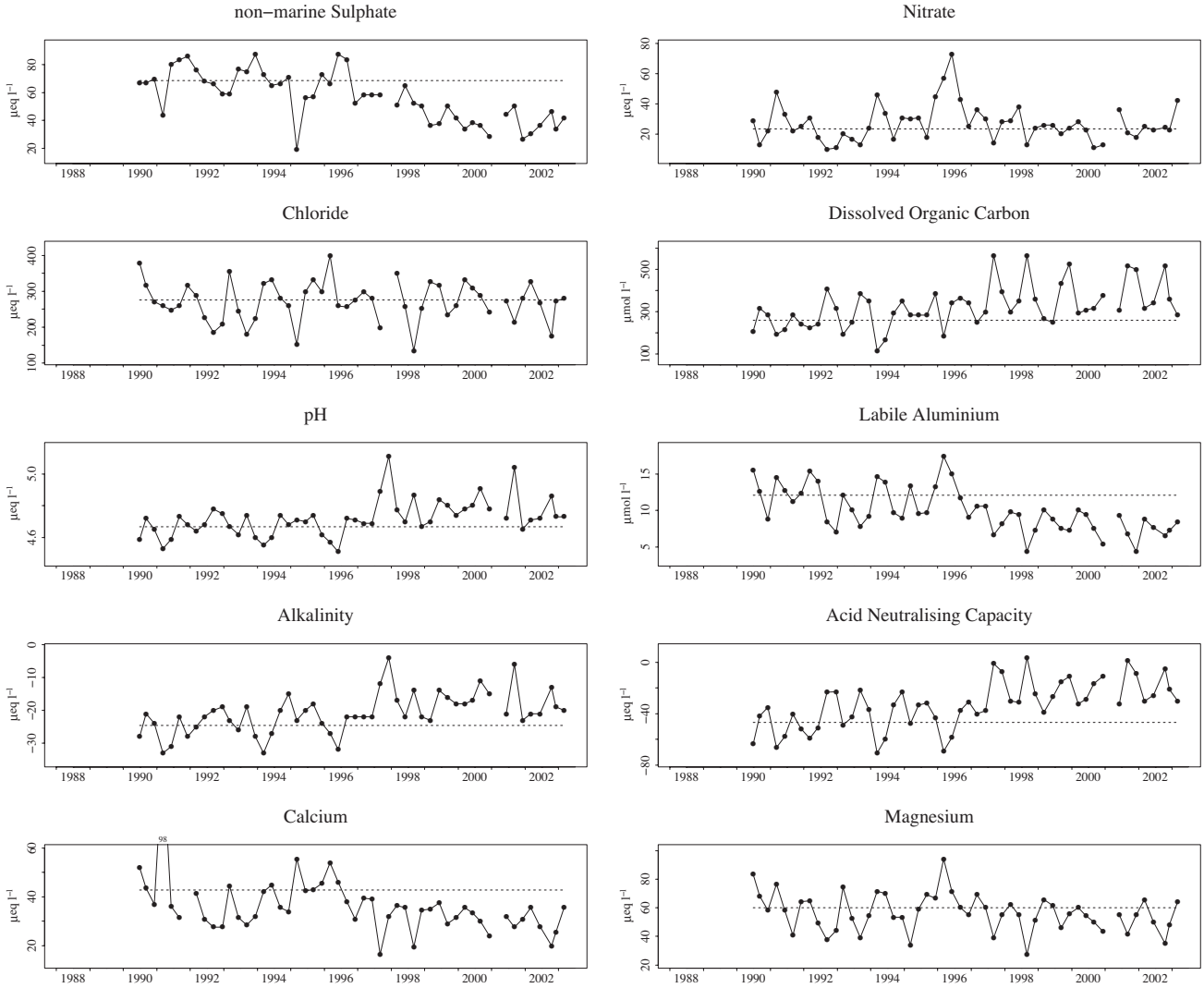


Site 21: Blue Lough

Grid reference:
J 327252



21.1a Time series for key chemical determinands



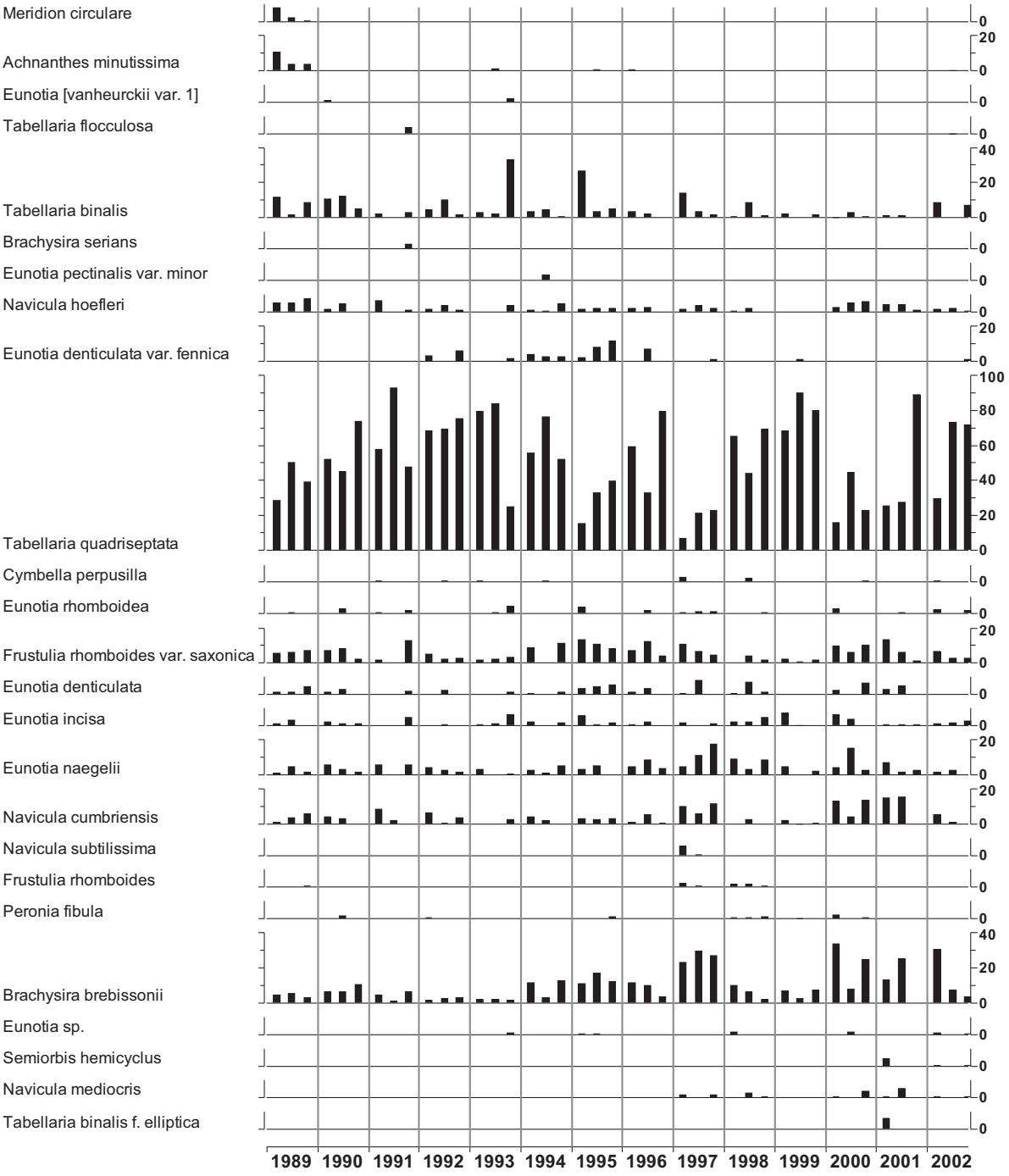
21.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		µeq l^{-1}	µeq l^{-1}	µeq l^{-1}		µeq l^{-1}	µeq l^{-1}	µS c m^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µeq l^{-1}	µg l^{-1}	µg l^{-1}	mg l^{-1}
Jun 1990	mean	68.8	23.5	276.2	4.67	-24.7	-46.8	55.2	42.6	59.2	254.1	11.5	392.6	326.2	3.1
- Mar 1993	st. dev	11.8	10.7	57.4	0.07	4.4	14.5	9.5	19.8	14.5	37.1	2.2	69.0	74.6	0.8
	min	43.8	10.0	186.2	4.53	-33.0	-66.4	41.0	27.4	37.0	195.8	8.4	288.0	191.0	2.3
	max	85.8	47.9	378.0	4.78	-19.0	-23.1	73.0	97.8	82.3	313.2	16.1	511.0	421.0	4.9
Apr 1993	mean	65.8	32.0	276.2	4.70	-21.7	-37.8	56.4	38.3	58.7	258.8	13.1	368.0	295.6	3.7
- Mar 1998	st. dev	15.6	15.0	60.7	0.13	6.7	17.8	8.5	9.0	13.4	48.2	4.7	67.4	74.8	1.2
	min	19.6	13.0	152.3	4.51	-33.0	-70.6	36.0	16.5	33.7	121.8	2.6	280.0	179.0	1.4
	max	87.5	73.0	400.6	5.11	-4.0	-1.3	73.0	55.4	93.0	369.8	25.3	520.0	470.0	6.8
Apr 1998	mean	41.3	24.1	265.6	4.78	-17.6	-20.3	48.7	30.5	51.2	241.8	12.4	281.2	207.9	4.5
- Mar 2003	st. dev	9.5	8.0	51.2	0.10	4.6	12.3	6.5	5.3	10.0	30.6	1.9	34.0	46.4	1.2
	min	27.2	11.0	135.4	4.65	-23.0	-38.9	33.0	19.5	27.1	169.7	9.2	212.0	117.0	3.0
	max	64.9	42.0	332.9	5.04	-6.0	3.5	59.0	37.4	65.0	291.5	15.6	331.0	273.0	6.8

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

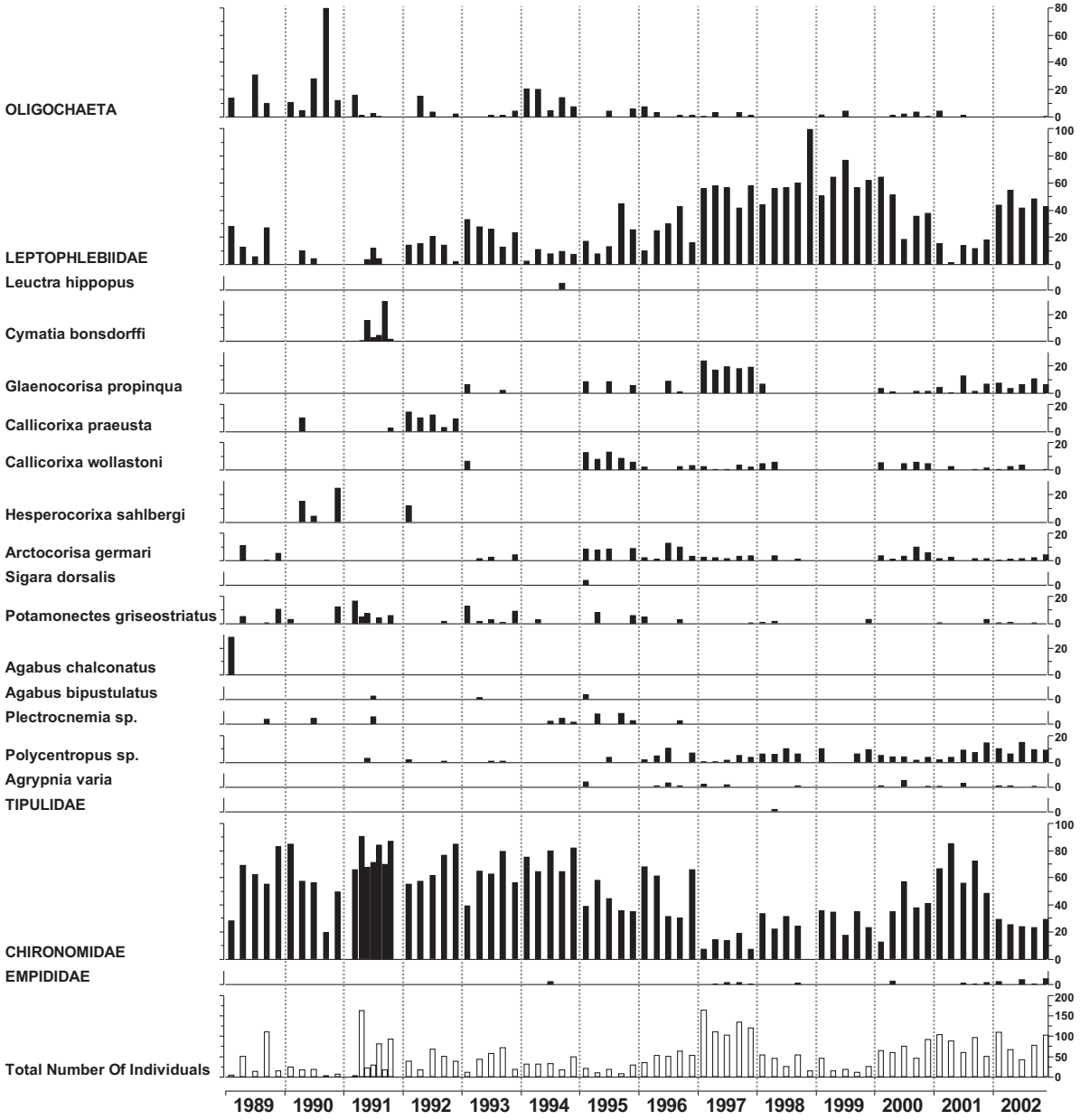
21.2 Blue Lough - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



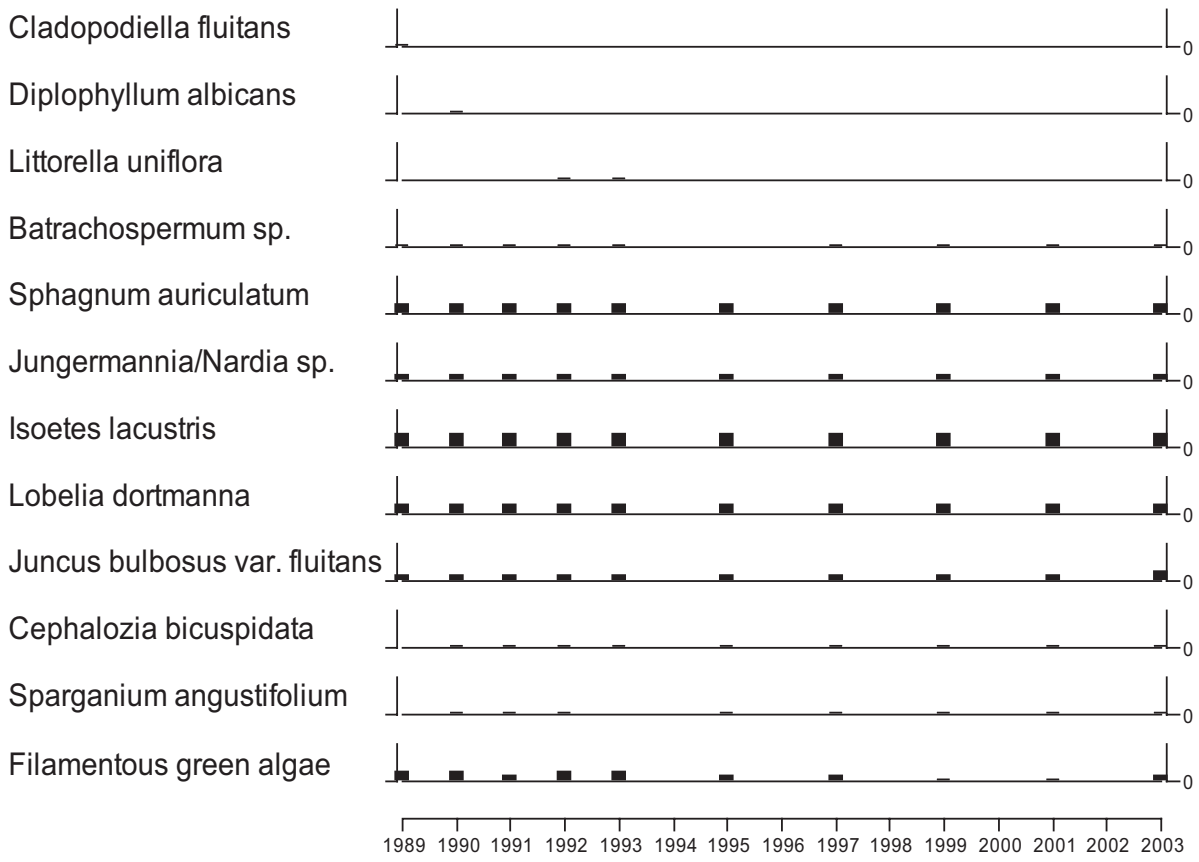
21.3 Blue Lough - macroinvertebrate data

percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



21.4 Blue Lough - aquatic macrophyte data

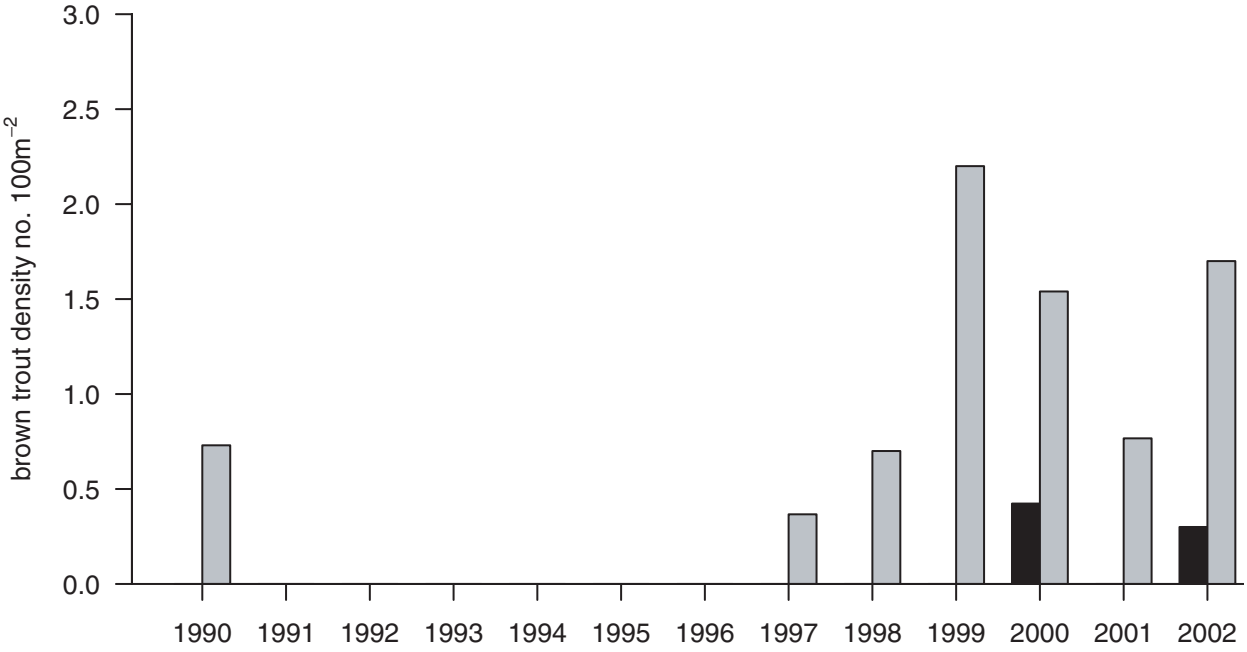
relative abundance of taxa based on a 1-5 scale
1 = rare; 2 = occasional; 3 = frequent; 4 = abundant; 5 = dominant



21.5a Blue Lough - salmonid data

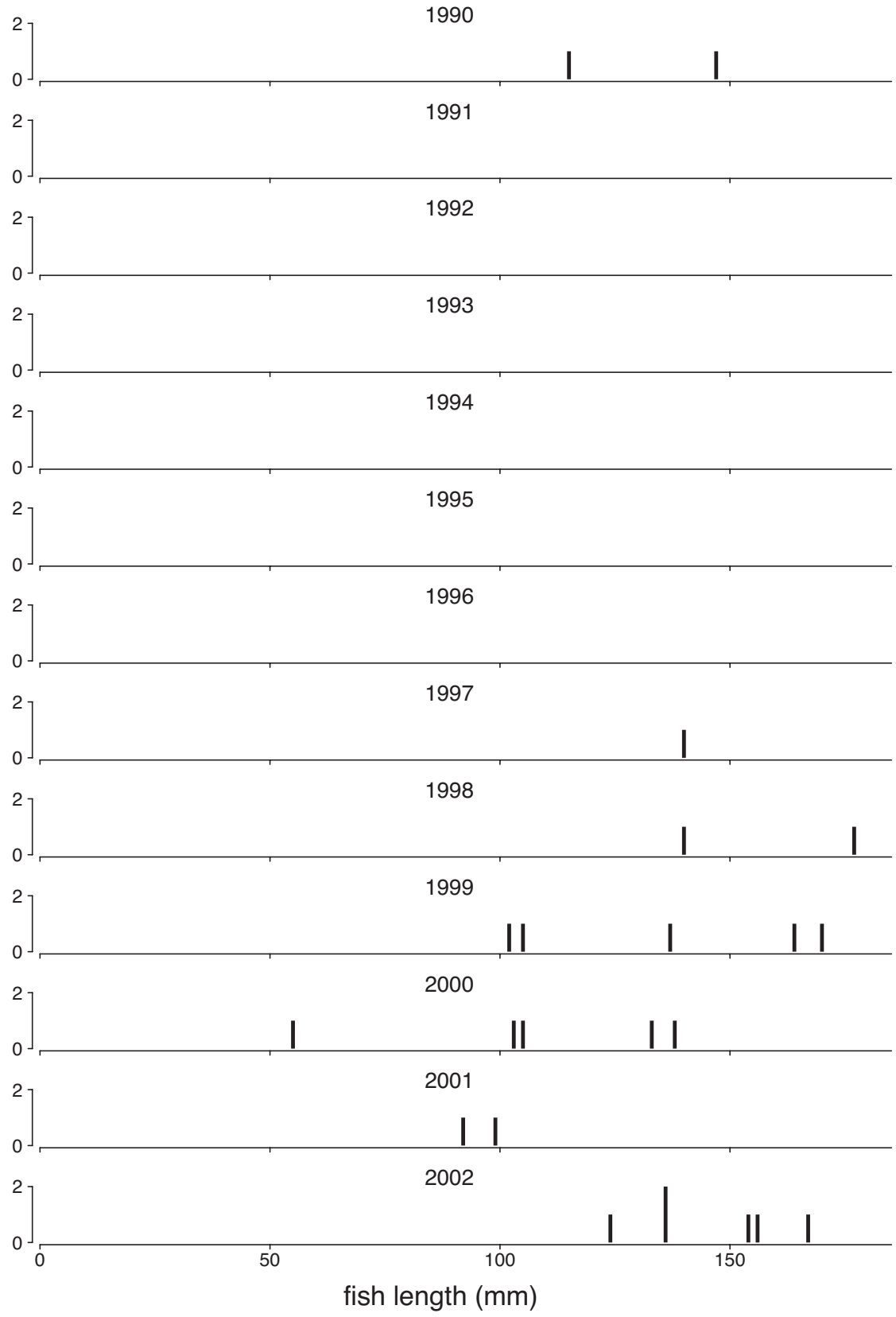
Brown trout (*Salmo trutta*) density.

0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars), in lake outflow stream.



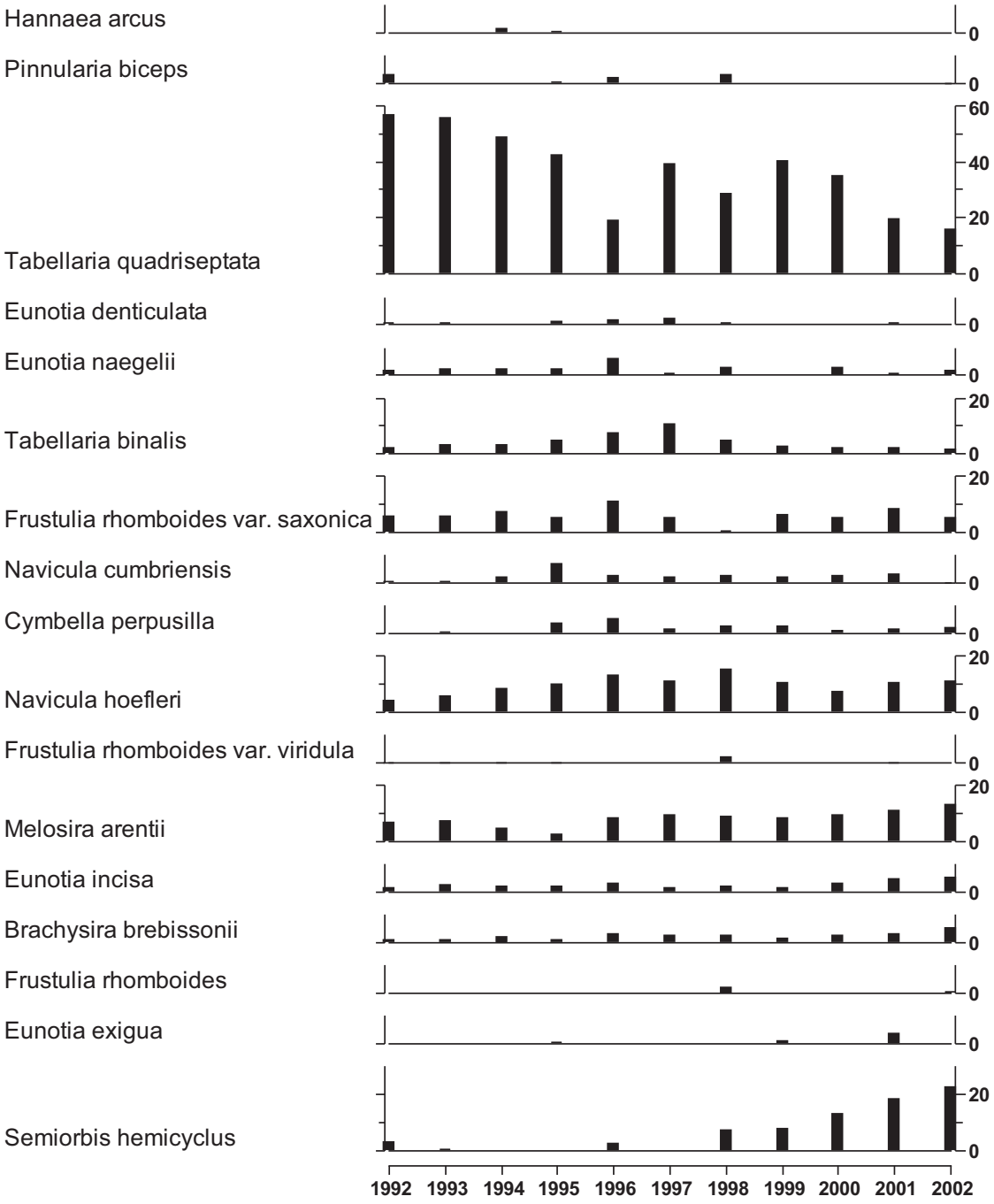
21.5b Blue Lough - salmonid data

Brown trout (*Salmo trutta*) length frequency summaries



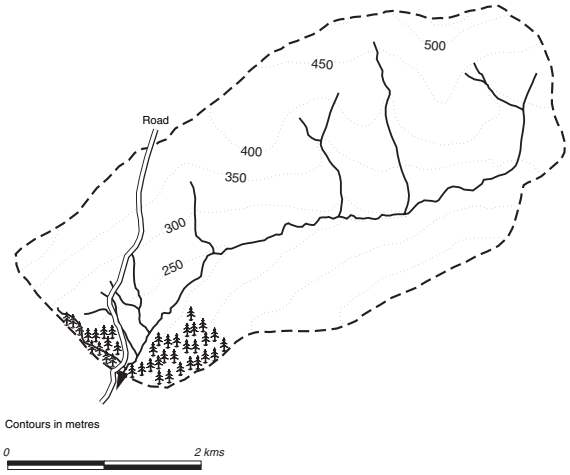
21.6 Blue Lough - sediment trap diatom data

Percentage frequency of all taxa in all samples (retrieved each summer) with a minimum abundance >2%

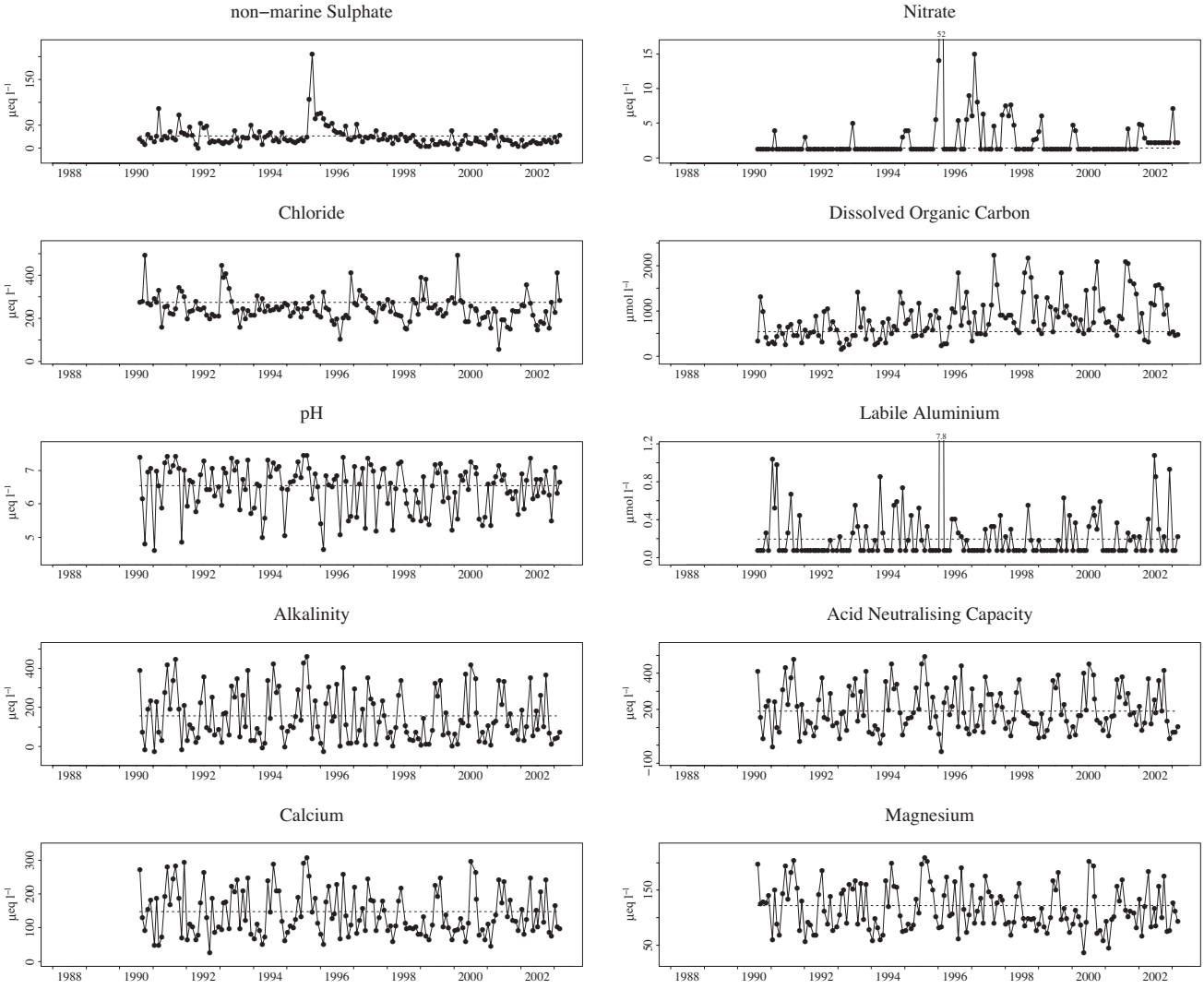


Site 22: Coneyglen Burn

Grid reference:
H 641884



22.1a Time series for key chemical determinands



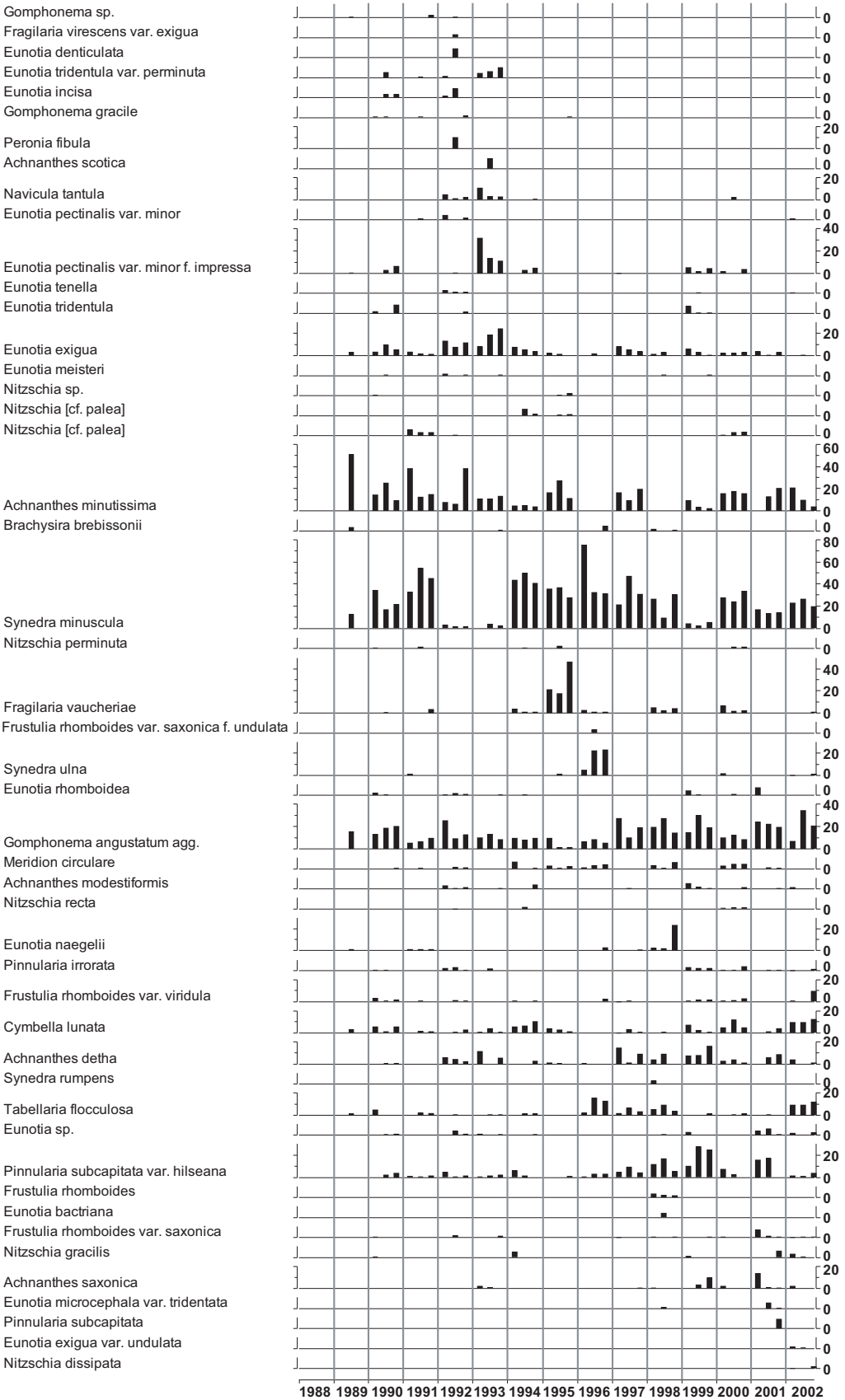
22.1b Summary data for key chemical determinands

Determinand		xSO_4^{2-}	NO_3^-	Cl^-	pH	alk	ANC	cond	Ca^{2+}	Mg^{2+}	Na^+	K^+	sol. Al	lab. Al	DOC
period		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$		$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu S\ cm^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu eq\ l^{-1}$	$\mu g\ l^{-1}$	$\mu g\ l^{-1}$	$mg\ l^{-1}$
Aug 1990 - Mar 1993	mean	26.5	1.4	274.6	6.54	157.9	189.6	56.0	147.8	120.4	248.0	8.8	34.3	5.3	6.5
	st. dev	19.0	0.6	75.0	0.75	132.5	127.3	12.9	77.7	42.7	42.9	2.0	17.5	7.0	3.3
	min	-0.5	1.3	158.0	4.60	-26.0	-12.0	37.0	26.9	55.1	182.7	5.4	6.0	2.0	1.7
	max	86.4	4.0	496.5	7.42	448.0	475.3	78.0	294.4	201.5	374.1	12.8	82.0	28.0	15.7
Apr 1993 - Mar 1998	mean	32.7	3.8	245.9	6.49	162.2	206.4	54.8	149.4	119.9	234.6	10.5	43.9	9.0	9.3
	st. dev	29.5	7.0	46.9	0.74	134.7	127.5	11.5	68.6	41.0	28.9	3.5	35.1	27.0	4.9
	min	4.1	1.3	104.4	4.62	-24.0	-34.8	31.0	48.9	57.6	139.2	2.6	7.0	2.0	2.8
	max	206.2	52.0	411.9	7.44	461.0	493.8	83.0	307.9	207.3	304.5	18.9	264.0	211.0	26.9
Apr 1998 - Mar 2003	mean	14.6	2.0	235.9	6.39	134.2	193.6	50.2	132.3	108.0	215.8	9.6	40.4	5.7	12.2
	st. dev	8.1	1.4	71.0	0.59	116.8	111.9	11.2	59.4	36.4	34.9	3.6	16.2	6.2	5.9
	min	-1.7	1.3	53.6	5.20	2.0	38.7	32.0	43.9	36.2	143.6	3.8	12.0	2.0	3.8
	max	38.4	7.4	496.5	7.37	419.0	452.5	73.0	295.9	200.7	352.4	21.7	88.0	29.0	26.0

alk = Gran or Dual Endpoint Alkalinity; ANC = Acid Neutralising Capacity (AB-ANC, see Chapter 5); cond = Conductivity (20°C);
sol. Al = soluble monomeric aluminium, lab. Al = labile soluble monomeric aluminium; DOC = disolved organic carbon

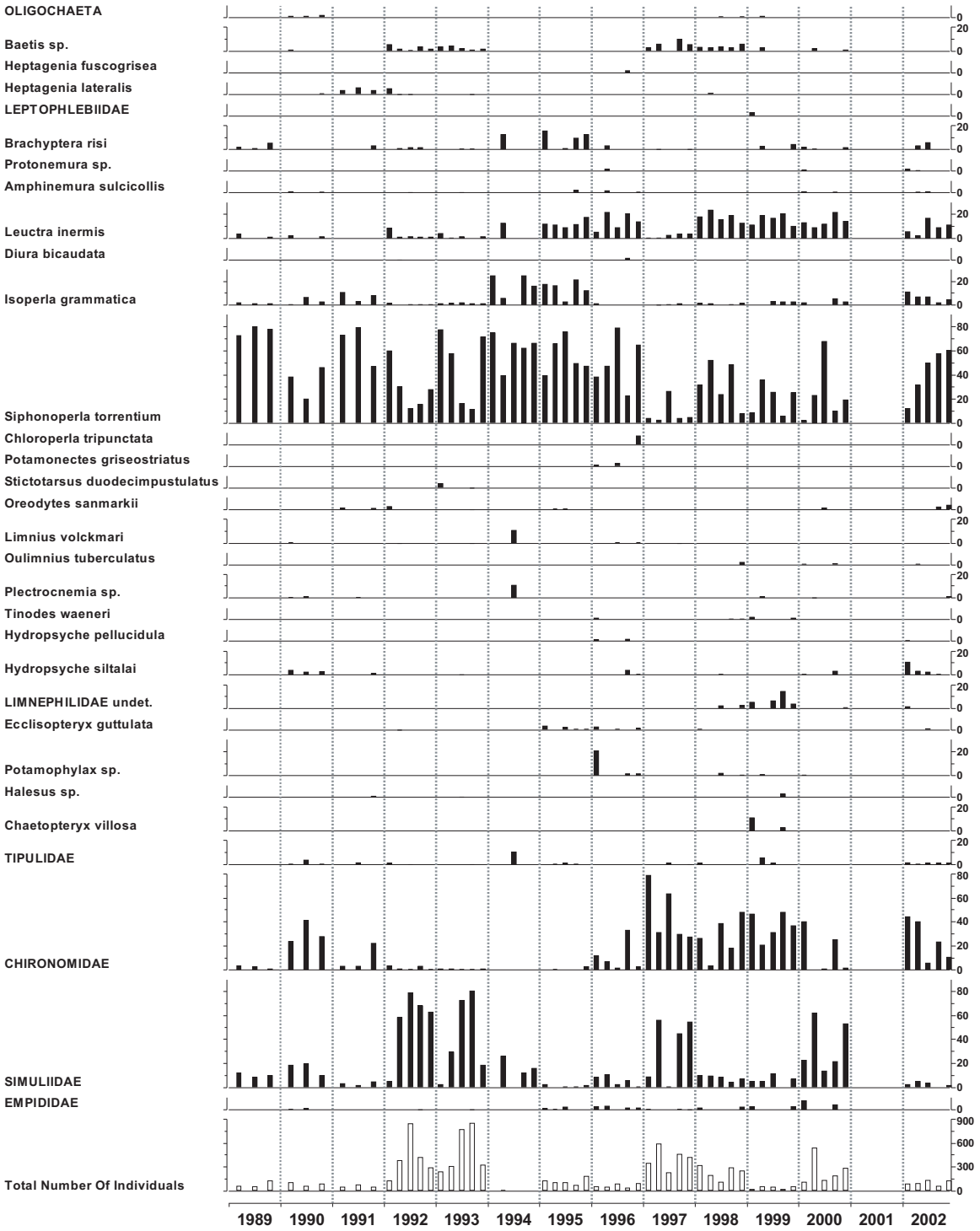
22.2 Coneyglen Burn - epilithic diatom data

percentage frequency of all taxa in all summer samples with a minimum abundance >2%



22.3 Coneyglen Burn - macroinvertebrate data

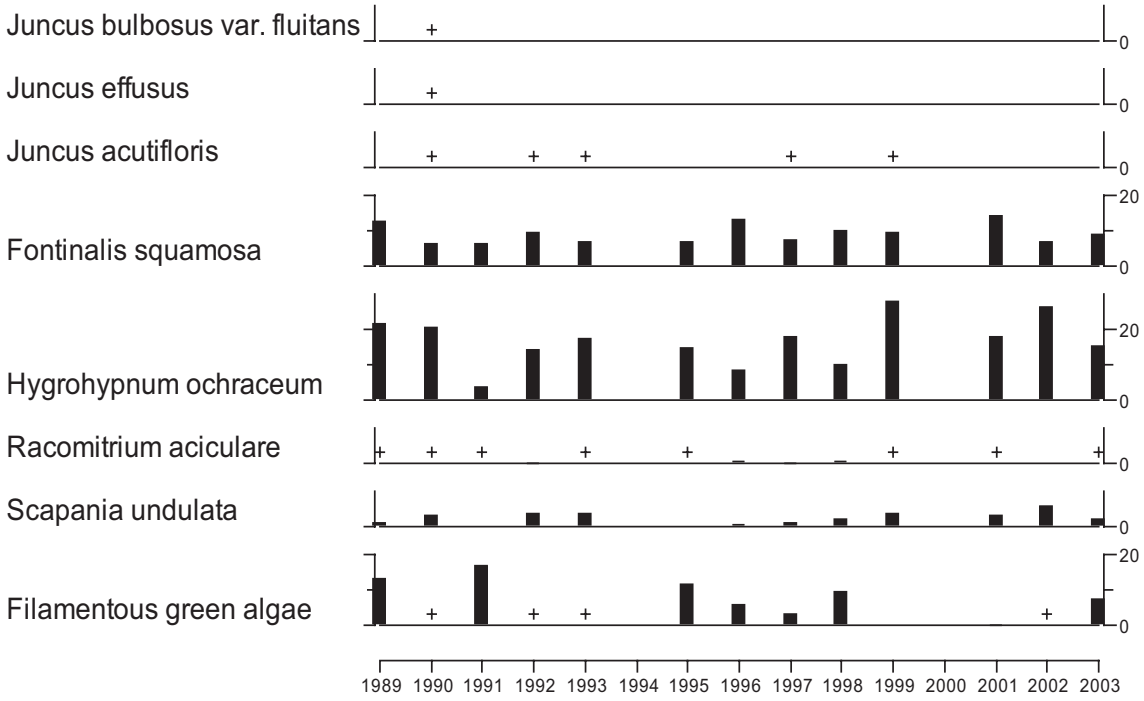
percentage frequency of all taxa in all spring kick samples with a minimum abundance >2%



22.4 Coneyglen Burn - aquatic macrophyte data

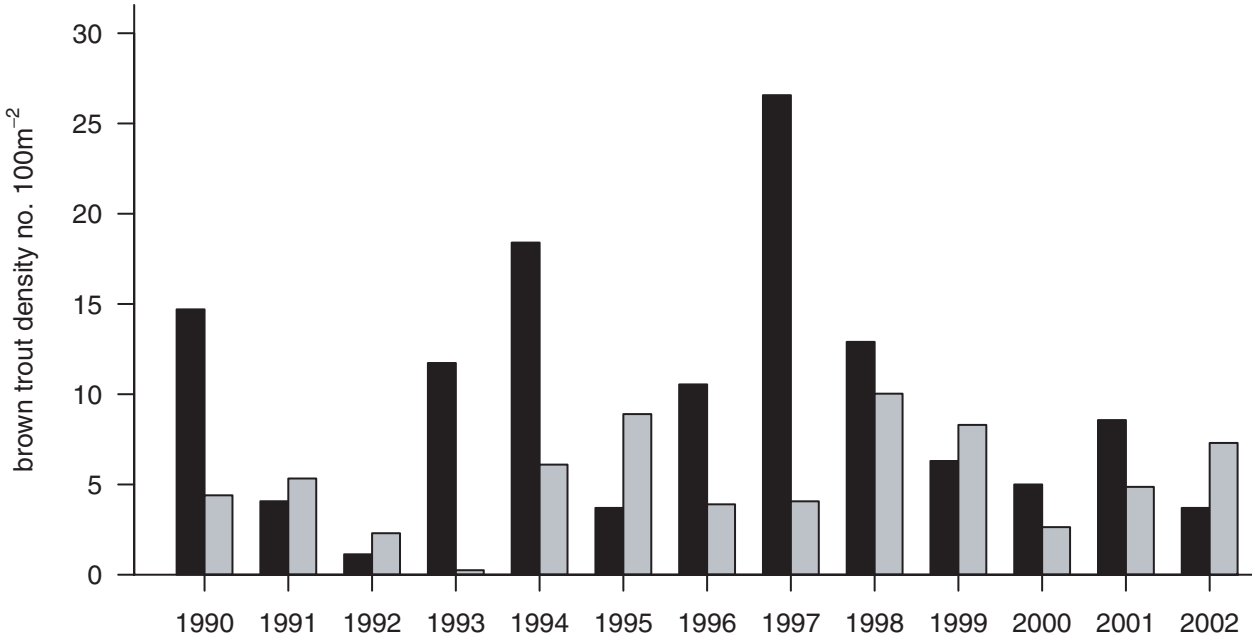
percentage cover estimates for 50 m survery stretch

no data for 1994 and 2000



22.5a Coneyglen Burn - salmonid data

Brown trout (*Salmo trutta*) density.
0 group (<1 year old black bars) and 0+ group (>1 year old; grey bars).



Appendix 2

APPENDIX 3

Participating Organisations

Project coordination: ENSIS-Environmental Change Research Centre (ECRC), University College London (UCL).

Chemistry database management: Centre for Ecology and Hydrology (CEH), Wallingford.

Biology database management: ENSIS-ECRC.

Stable determinand chemistry analyses: CEH, Wallingford.

Local chemistry analyses:

- Fisheries Research Services, Freshwater Laboratory, Pitlochry.
- Environment Agency, Llanelli.

Chemistry AQC: Water Research Centre (WRc), Medmenham

Continuous stream monitoring:

- Scottish Environmental Protection Agency (SEPA)
- CEH, Wallingford.

Macroinvertebrate analyses: School of Biological Sciences, QMW.

Aquatic macrophyte analyses: ENSIS-ECRC, UCL.

Epilithic diatom analyses: ENSIS-ECRC, UCL.

Lake sediment trap analyses: ENSIS-ECRC, UCL.

Fishery coordination: Institute of Freshwater Ecology, Wareham.

Fish Analyses:

- Fisheries Research Services, Freshwater Laboratory, Pitlochry.
- CEH Lancaster.
- School of Biological Sciences, QMW.
- University Enterprises Plymouth.
- Environment Agency, Llanelli & Caernarfon.
- Department of Agriculture, Northern Ireland.