



Supplement of

Consequences of the 2022 drought on nutrient dynamics in forest soil solutions of a declining spruce plot in the Strengbach catchment (Vosges Mountains, France)

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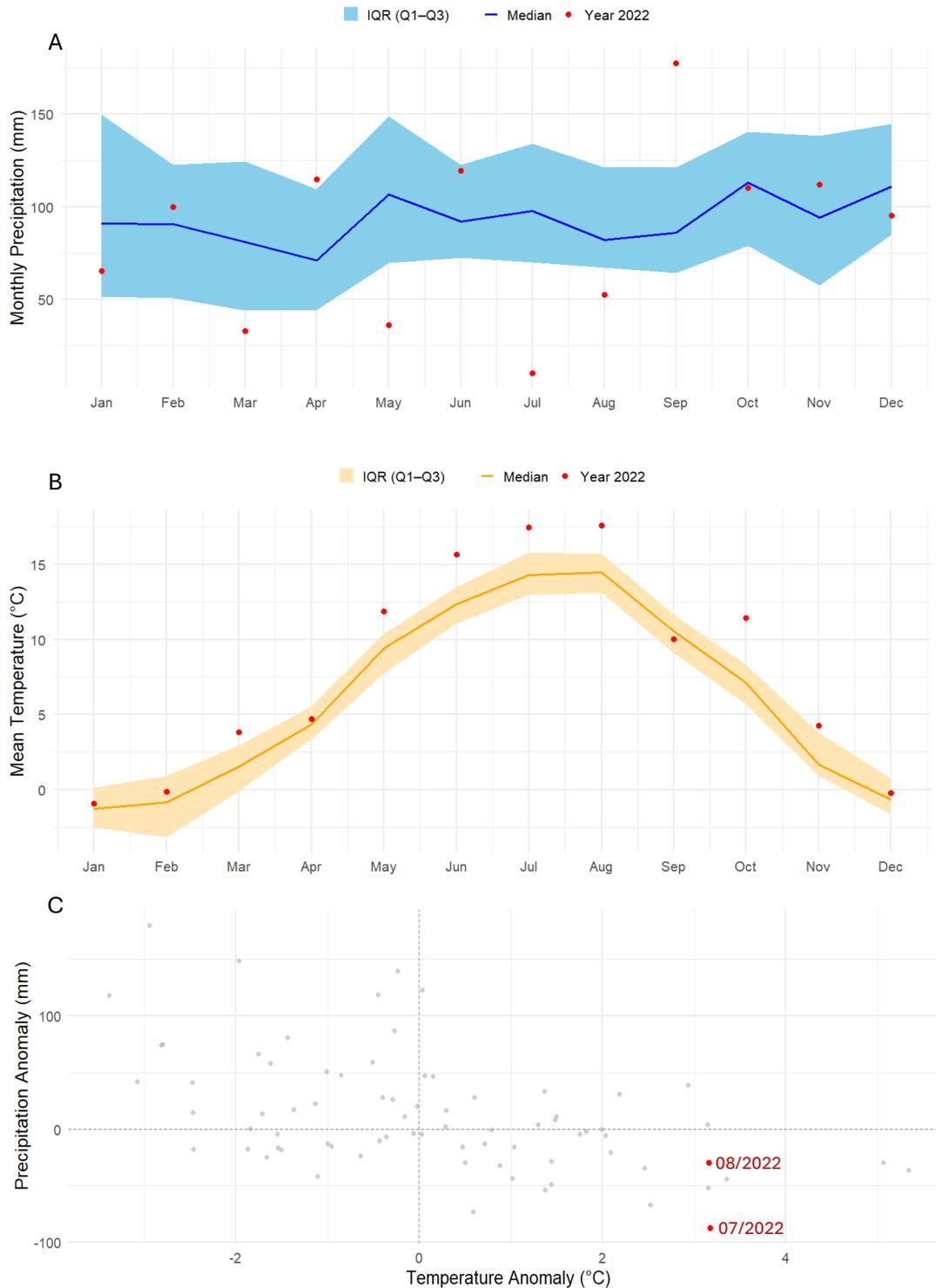


Figure S1: Monthly precipitation (mm) of the year 2022 (red points) compared with the median and the interquartile range (IQR) of the 1987-2024 period (A). Monthly mean temperature (°C) of the year 2022 (red points) compared with the median and the interquartile range (IQR) of the 1987-2024 period (B). Monthly precipitation anomalies versus monthly temperature anomalies for the month of July and August during the 1987-2024 period with the year 2022 in red (C).

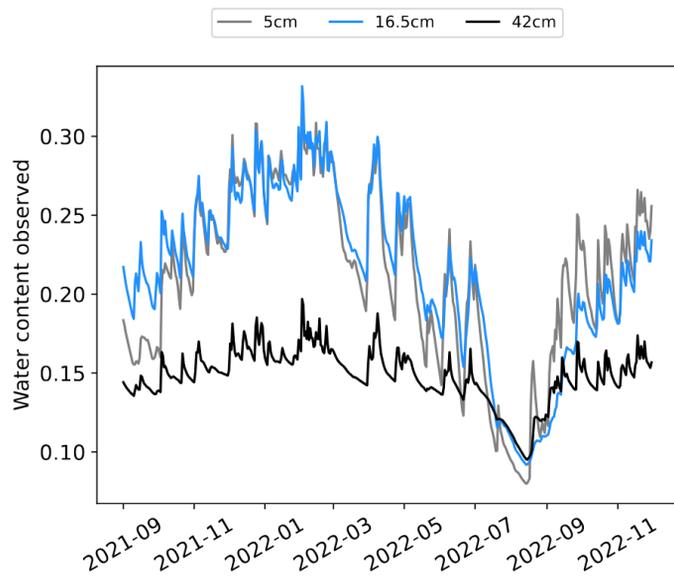


Figure S2: Soil water content measured with TDR sensors beneath a spruce plot of the Strengbach catchment at three different depths (5, 16.5 and 42cm). Monitoring devices included Campbell TDR probes (model CS616, Campbell Scientific Inc., Logan, UT, USA) and Campbell temperature probes (model 107, Campbell Scientific Inc., Logan, UT, USA) to allow for temperature correction, connected to a Campbell CR1000 data logger with a 10-min recording interval. The standard quadratic calibration equation provided by the manufacturer was used to derive volumetric water content (m^3/m^3). An important decrease in soil water content was observed in July and August 2022 across the entire soil profile. An earlier decrease was also observed in May and June at depths of 5 and 16.5cm. Those two drying periods are consistent with the simulation outputs presented in Section 3.1. Notice that these measurements were conducted on a different plot from the one where soil solutions were sampled.

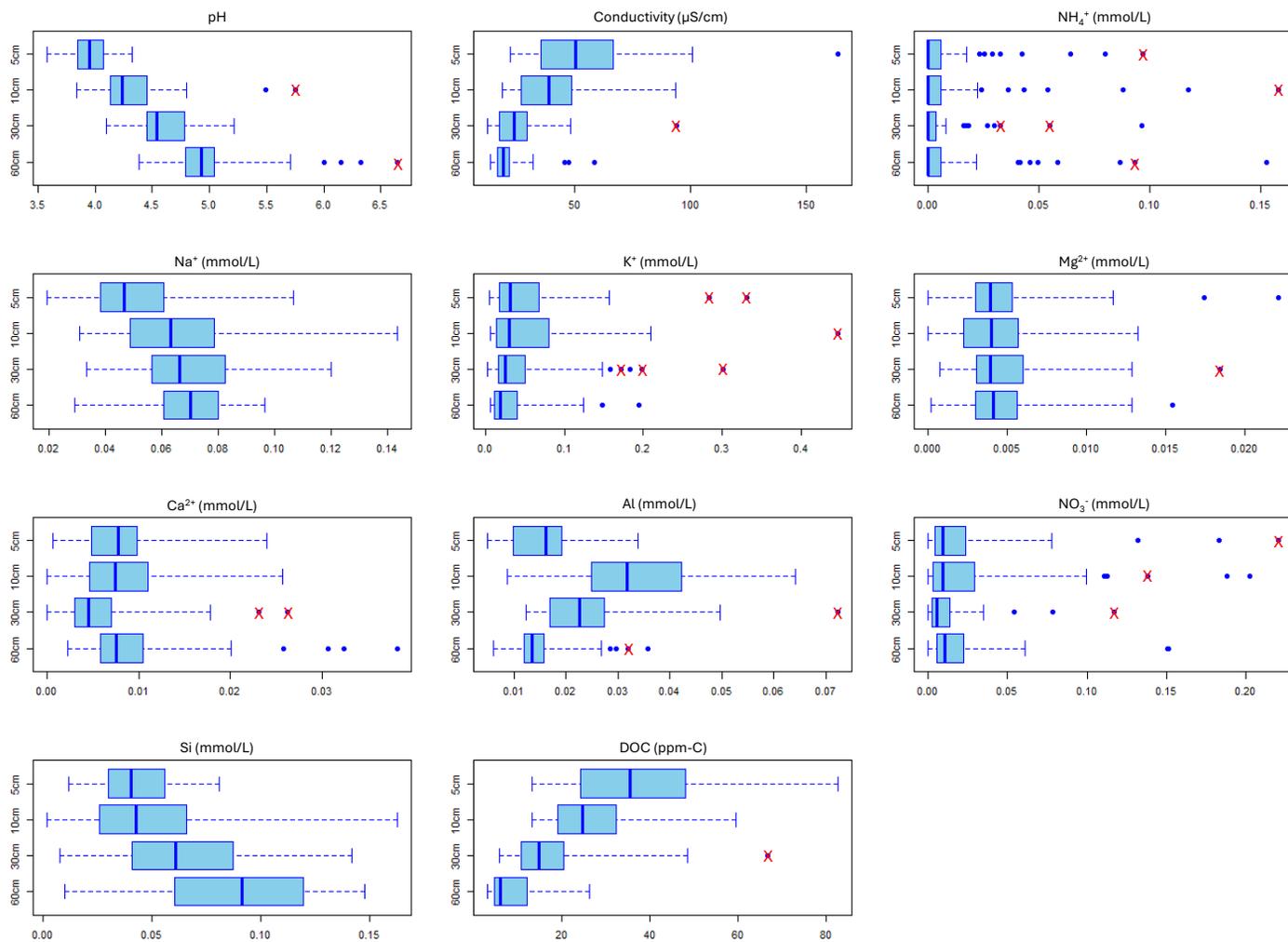


Figure S3: Boxplots of pH, conductivity (Cond. in $\mu\text{S}/\text{cm}$), Dissolved Organic Carbon (DOC in ppm-C), and concentrations (mmol/L) in ions (Na^+ , K^+ , Mg^{2+} , Ca^{2+} , Al , Si , NH_4^+ and NO_3^-) for the 2015-2023 period in soil solutions at 5, 10, 30, 60 cm depth. The boxes represent the interquartile range (IQR) with on the left the first quartile Q1, on the right the third quartile Q3 and the bar in the box represents the median. The whiskers extend from the box to the farthest data point located within the interval $[Q1 - 3 \cdot \text{IQR}; Q3 + 3 \cdot \text{IQR}]$. The outliers, outside this interval, are represented in blue points. Points of the summer 2022 (from June to September) are represented with red crosses. NH_4^+ concentrations are often below detection limit (more than half of the values), so a lot of value might be considered as outliers with this method.

Depth (cm)	Date (dd/mm/yyyy)	pH	(uS/cm)		mmol/L							ppm-C	L
			Conductivity	Na+	K+	Mg2+	Ca2+	Al	NH4+	NO3-	Si	DOC	Volume
5	20/01/2015	3.94	49.9	0.046	0.015	0.005	0.010	0.018	0.001	0.008	0.054	35.57	10.20
5	31/03/2015	4.17	29.8	0.043	0.016	0.004	0.008	0.011	0.007	0.024	0.033	18.90	7.80
5	26/05/2015	4.12	31.7	0.034	0.009	0.002	0.004	0.011	0.001	0.005	0.033	23.12	3.95
5	21/07/2015	3.91	49.3	0.050	0.016	0.005	0.010	0.019	0.001	0.001	0.065	40.10	1.65
5	15/09/2015	3.93	92.3	0.073	0.284	0.022	0.020	0.015	0.064	0.183	0.066	50.46	1.70
5	10/11/2015	3.95	72.3	0.071	0.144	0.017	0.018	0.009	0.025	0.132	0.040	37.54	3.50
5	19/01/2016	4.30	31.3	0.056	0.038	0.004	0.008	0.020	0.001	0.011	0.018	17.62	4.50
5	15/03/2016	4.27	26.3	0.046	0.018	0.004	0.004	0.008	0.001	0.007	0.019	19.33	21.00
5	10/05/2016	4.15	33.9	0.046	0.014	0.004	0.005	0.014	0.001	0.004	0.029	30.16	11.20
5	05/07/2016	4.07	35.2	0.048	0.016	0.003	0.008	0.018	0.001	0.008	0.035	38.09	9.20
5	30/08/2016	4.00	44.5	0.032	0.040	0.006	0.010	0.010	0.029	0.013	0.040	29.95	1.20
5	08/11/2016	3.89	66.5	0.051	0.097	0.011	0.019	0.011	0.033	0.078	0.050	37.30	7.50
5	17/01/2017	3.92	51.2	0.049	0.018	0.008	0.011	0.010	<d.l.	0.017	0.045	26.90	8.50
5	14/03/2017	4.08	37.5	0.049	0.015	0.005	0.008	0.007	<d.l.	0.015	0.028	16.82	30.00
5	09/05/2017	4.03	35.7	0.040	0.010	0.004	0.006	0.011	<d.l.	0.011	0.038	24.85	11.00
5	04/07/2017	4.04	37.1	0.041	0.018	0.003	0.008	0.011	<d.l.	0.003	0.038	31.52	6.60
5	29/08/2017	3.92	48.8	0.040	0.017	0.003	0.009	0.013	<d.l.	0.009	0.057	38.57	4.80
5	07/11/2017	4.00	53.4	0.066	0.070	0.006	0.013	0.016	0.080	0.015	0.052	39.59	6.00
5	15/01/2018	3.95	35.1	0.031	0.006	0.004	0.007	0.009	<d.l.	<d.l.	0.017	19.52	>30
5	13/03/2018	4.03	22.1	0.029	0.005	0.002	0.002	0.005	<d.l.	0.009	0.012	13.32	17.40
5	09/05/2018	4.00	44.0	0.059	0.016	0.003	0.007	0.011	<d.l.	0.044	0.031	25.01	4.60
5	04/07/2018	3.97	49.1	0.061	0.033	0.005	0.010	0.017	<d.l.	0.031	0.041	37.26	6.20
5	28/08/2018	4.20	49.2	0.032	0.152	0.005	0.008	0.008	0.042	0.055	0.019	29.48	0.45
5	23/10/2018	3.97	50.3	0.043	0.098	0.005	0.008	0.009	0.004	0.035	0.039	33.82	3.20
5	07/01/2019	3.90	58.3	0.050	0.059	0.005	0.008	0.010	<d.l.	0.017	0.032	34.41	22.40
5	06/03/2019	4.12	32.0	0.033	0.022	0.004	0.003	0.008	<d.l.	0.006	0.018	20.50	>30
5	30/04/2019	4.11	33.4	0.042	0.031	0.005	0.005	0.009	<d.l.	0.011	0.015	21.33	16.30
5	24/06/2019	3.93	51.0	0.068	0.051	0.005	0.007	0.016	<d.l.	0.008	0.034	41.07	9.60
5	20/08/2019	3.85	68.6	0.059	0.086	0.006	0.009	0.015	<d.l.	0.023	0.055	43.39	4.90
5	29/10/2019	3.73	76.7	0.064	0.043	0.008	0.010	0.018	0.002	0.023	0.050	45.34	18.50
5	06/01/2020	4.16	29.8	0.037	0.020	0.003	0.004	0.010	<d.l.	0.011	0.018	21.73	24.90
5	03/03/2020	4.24	29.9	0.040	0.027	0.002	0.003	0.007	<d.l.	<d.l.	0.013	16.47	21.20
5	18/05/2020	4.32	25.2	0.042	0.025	0.000	0.003	0.007	<d.l.	0.007	0.016	23.64	8.60
5	07/07/2020	3.99	51.1	0.085	0.053	0.002	0.007	0.017	<d.l.	0.009	0.040	46.62	5.20
5	04/08/2020	3.77	83.2	0.070	0.112	0.004	0.009	0.019	<d.l.	<d.l.	0.053	82.65	0.40
5	27/10/2020	3.80	65.5	0.068	0.063	0.004	0.007	0.021	<d.l.	0.004	0.064	54.38	11.15
5	18/12/2020	3.79	62.4	0.053	0.022	0.003	0.024	0.023	<d.l.	<d.l.	0.060	55.65	6.20
5	02/03/2021	4.24	24.2	0.020	0.010	<d.l.	0.004	0.009	<d.l.	0.003	0.018	14.43	8.60
5	27/04/2021	4.07	38.2	0.034	0.021	0.003	0.004	0.014	<d.l.	0.008	0.033	18.59	3.30
5	22/06/2021	3.91	51.2	0.044	0.024	0.002	0.004	0.018	<d.l.	0.005	0.028	27.69	7.90
5	17/08/2021	3.79	62.7	0.061	0.026	0.003	0.006	0.034	<d.l.	0.003	0.060	49.69	4.10
5	26/10/2021	3.67	100.6	0.060	0.111	0.007	0.012	0.024	0.023	0.054	0.069	60.28	0.60
5	07/01/2022	3.77	66.7	0.047	0.031	0.004	0.007	0.023	<d.l.	0.002	0.058	45.43	15.70
5	15/02/2022	3.87	53.8	0.035	0.026	0.003	0.004	0.016	<d.l.	0.001	0.040	32.55	-
5	13/04/2022	3.85	68.0	0.078	0.063	0.003	0.001	0.017	0.004	0.027	0.045	34.84	8.60

5	21/06/2022	3.79	76.6	0.086	0.085	0.005	0.008	0.023	0.008	0.029	0.069	54.64	2.35
5	20/07/2022	3.84	75.5	0.075	0.119	0.006	0.008	0.019	0.006	0.030	0.078	56.34	1.30
5	30/08/2022	3.58	163.4	0.107	0.331	0.012	0.018	0.022	0.097	0.220	0.081	68.06	0.30
5	10/11/2022	3.70	84.7	0.078	0.096	0.004	0.009	0.026	0.017	0.011	0.069	62.23	12.10
5	17/01/2023	3.71	65.9	0.050	0.042	0.004	0.007	0.026	0.005	<d.l.	0.054	51.46	8.60
5	14/03/2023	3.99	45.6	0.036	0.024	0.002	0.004	0.016	0.007	0.009	0.050	29.60	2.00
5	09/05/2023	3.93	48.1	0.029	0.032	0.002	0.003	0.019	<d.l.	<d.l.	0.035	39.06	4.30
5	04/07/2023	4.00	59.5	0.036	0.157	0.007	0.018	0.018	0.016	0.016	0.040	49.55	2.20
5	29/08/2023	3.74	76.2	0.041	0.066	0.004	0.008	0.023	0.001	0.007	0.067	59.42	5.50
5	07/11/2023	3.70	81.1	0.037	0.066	0.006	0.012	0.021	<d.l.	0.004	0.067	54.69	7.10
10	20/01/2015	4.42	26.6	0.063	0.008	0.004	0.011	0.024	0.001	0.014	0.045	13.40	27.80
10	31/03/2015	4.62	18.9	0.055	0.010	0.004	0.011	0.027	0.007	0.016	0.043	13.30	16.60
10	26/05/2015	4.40	20.3	0.041	0.006	0.002	0.003	0.027	0.001	0.005	0.032	14.31	18.50
10	21/07/2015	4.79	21.1	0.035	0.050	0.005	0.009	0.018	0.022	0.001	0.017	17.08	6.05
10	15/09/2015	4.25	60.0	0.052	0.173	0.013	0.026	0.025	0.088	0.188	0.018	26.69	2.90
10	10/11/2015	4.18	53.5	0.072	0.116	0.009	0.021	0.027	0.004	0.111	0.024	24.99	1.30
10	19/01/2016	4.11	38.7	0.062	0.036	0.007	0.009	0.009	0.001	0.008	0.034	24.82	14.70
10	15/03/2016	4.47	21.7	0.047	0.014	0.002	0.008	0.016	0.001	0.006	0.023	15.28	21.40
10	10/05/2016	4.08	26.0	0.066	0.008	0.002	0.000	0.031	0.001	0.004	0.065	20.69	12.40
10	05/07/2016	4.39	21.2	0.067	0.006	0.001	0.001	0.036	0.001	0.005	0.061	24.78	19.00
10	30/08/2016	4.80	26.7	0.031	0.085	0.005	0.010	0.017	0.043	0.031	0.012	19.63	3.60
10	08/11/2016	4.24	59.8	0.046	0.157	0.012	0.024	0.022	0.054	0.203	0.018	24.04	6.40
10	17/01/2017	4.41	22.4	0.032	0.031	0.003	0.005	0.014	<d.l.	0.009	0.018	14.55	7.80
10	14/03/2017	4.46	24.3	0.064	0.016	0.004	0.007	0.030	<d.l.	<d.l.	0.049	16.26	23.90
10	09/05/2017	4.33	25.1	0.052	0.014	0.004	0.005	0.033	<d.l.	0.020	0.052	19.55	9.00
10	04/07/2017	4.64	19.4	0.053	0.028	0.003	0.006	0.026	<d.l.	0.002	0.041	19.99	6.00
10	29/08/2017	4.24	38.9	0.040	0.058	0.004	0.009	0.023	<d.l.	0.055	0.020	26.39	4.40
10	07/11/2017	4.10	48.5	0.072	0.102	0.006	0.013	0.030	<d.l.	0.044	0.027	25.94	6.20
10	15/01/2018	4.14	32.8	0.048	0.015	0.004	0.006	0.027	<d.l.	<d.l.	0.030	18.60	>30
10	13/03/2018	4.13	27.9	0.044	0.011	0.003	0.002	0.024	<d.l.	0.008	0.032	14.99	16.80
10	09/05/2018	4.47	32.9	0.078	0.025	0.005	0.008	0.042	0.008	0.056	0.108	24.07	1.65
10	04/07/2018	4.56	20.5	0.053	0.022	0.005	0.006	0.025	<d.l.	0.021	0.030	17.50	12.00
10	28/08/2018	5.49	46.4	0.035	0.196	0.009	0.019	0.016	0.117	0.096	0.002	22.78	2.70
10	23/10/2018	4.31	48.8	0.043	0.138	0.008	0.017	0.023	0.036	0.112	0.021	29.83	3.90
10	07/01/2019	4.13	46.0	0.050	0.070	0.004	0.009	0.024	<d.l.	0.026	0.024	29.15	14.90
10	06/03/2019	4.38	26.8	0.047	0.027	0.004	0.003	0.018	<d.l.	0.017	0.026	13.70	21.00
10	30/04/2019	4.11	45.9	0.078	0.028	0.006	0.007	0.037	<d.l.	0.014	0.047	23.16	13.80
10	24/06/2019	4.17	38.8	0.072	0.032	0.005	0.008	0.039	<d.l.	0.014	0.038	33.54	3.90
10	20/08/2019	4.00	60.3	0.047	0.095	0.007	0.011	0.027	0.007	0.094	0.025	31.21	3.80
10	29/10/2019	3.91	64.9	0.079	0.050	0.008	0.012	0.046	0.012	0.041	0.046	43.36	11.20
10	06/01/2020	4.35	39.1	0.101	0.012	0.003	0.006	0.055	<d.l.	0.008	0.094	29.29	15.00
10	03/03/2020	4.48	30.9	0.082	0.010	0.002	0.003	0.039	<d.l.	<d.l.	0.079	26.80	15.80
10	18/05/2020	4.44	27.4	0.058	0.020	0.001	0.004	0.027	0.005	0.028	0.030	24.74	10.00
10	07/07/2020	4.42	27.0	0.055	0.035	0.002	0.008	0.030	<d.l.	<d.l.	0.024	34.03	5.50
10	04/08/2020	4.18	44.0	0.050	0.076	0.004	0.010	0.034	<d.l.	<d.l.	0.029	54.40	0.50
10	27/10/2020	4.22	37.3	0.057	0.062	0.003	0.006	0.035	0.001	0.017	0.040	33.55	7.85
10	18/12/2020	4.07	48.6	0.094	0.024	0.004	0.008	0.053	<d.l.	0.006	0.113	48.36	3.25
10	02/03/2021	4.55	22.7	0.050	0.007	<d.l.	0.003	0.032	<d.l.	0.002	0.050	14.48	30.90

10	27/04/2021	4.52	27.3	0.064	0.015	0.002	0.003	0.039	0.002	<d.l.	0.116	16.07	3.30
10	22/06/2021	4.20	39.7	0.074	0.011	0.002	0.003	0.044	<d.l.	0.009	0.073	18.56	10.25
10	17/08/2021	4.39	28.3	0.073	0.015	0.001	0.005	0.044	0.005	0.004	0.082	22.62	7.10
10	26/10/2021	4.13	68.5	0.085	0.172	0.008	0.016	0.042	0.007	0.099	0.034	43.22	1.50
10	07/01/2022	4.18	41.9	0.078	0.030	0.004	0.006	0.038	<d.l.	0.002	0.071	28.30	12.60
10	15/02/2022	4.16	40.8	0.081	0.012	0.003	0.003	0.032	<d.l.	<d.l.	0.104	19.90	5.00
10	13/04/2022	4.21	40.3	0.088	0.010	0.001	<d.l.	0.036	<d.l.	0.004	0.099	20.52	8.70
10	21/06/2022	4.64	40.9	0.098	0.044	0.009	0.009	0.044	0.024	0.048	0.043	24.90	0.20
10	20/07/2022	4.16	58.1	0.091	0.135	0.006	0.018	0.049	<d.l.	0.011	0.049	49.48	0.30
10	30/08/2022	5.75	93.5	0.102	0.447	0.013	0.017	0.042	0.158	0.138	0.016	43.52	0.03
10	10/11/2022	3.93	77.0	0.090	0.185	0.005	0.012	0.064	0.006	0.004	0.067	57.61	6.40
10	17/01/2023	3.84	76.3	0.143	0.050	0.004	0.007	0.057	<d.l.	<d.l.	0.163	36.14	3.70
10	14/03/2023	4.15	53.7	0.123	0.024	0.004	0.005	0.044	<d.l.	0.005	0.150	26.32	2.80
10	09/05/2023	4.27	37.2	0.091	0.015	0.002	0.003	0.038	<d.l.	<d.l.	0.109	25.54	6.60
10	04/07/2023	4.05	43.5	0.063	0.066	0.002	0.005	0.048	<d.l.	0.004	0.056	39.13	2.00
10	29/08/2023	4.15	42.2	0.044	0.107	0.002	0.003	0.046	<d.l.	<d.l.	0.048	45.61	1.60
10	07/11/2023	4.12	58.0	0.052	0.210	0.007	0.011	0.055	<d.l.	0.012	0.053	59.64	1.80
30	20/01/2015	4.50	26.8	0.120	0.004	0.002	0.002	0.014	0.001	0.005	0.142	9.88	15.20
30	31/03/2015	4.83	15.4	0.088	0.003	0.002	0.001	0.015	0.001	0.005	0.094	9.60	11.50
30	26/05/2015	4.73	16.9	0.083	0.004	0.001	0.000	0.014	0.001	0.005	0.072	9.57	3.70
30	21/07/2015	4.51	23.8	0.071	0.033	0.004	0.007	0.022	0.001	0.001	0.040	21.20	0.60
30	19/01/2016	4.54	28.6	0.098	0.032	0.004	0.007	0.015	0.001	0.003	0.041	13.78	2.90
30	15/03/2016	4.67	16.2	0.055	0.011	0.002	0.001	0.012	0.001	0.006	0.038	9.05	24.50
30	10/05/2016	4.53	15.9	0.060	0.005	0.001	0.001	0.013	0.001	<d.l.	0.102	8.76	8.70
30	05/07/2016	4.79	14.4	0.074	0.006	0.001	0.001	0.015	0.001	0.005	0.125	11.59	13.50
30	30/08/2016	4.85	22.1	0.076	0.049	0.004	0.005	0.016	0.016	0.008	0.063	17.61	0.80
30	08/11/2016	4.24	44.2	0.080	0.060	0.009	0.011	0.026	0.004	0.117	0.033	15.79	2.70
30	17/01/2017	4.60	18.7	0.051	0.017	0.003	0.004	0.015	<d.l.	0.005	0.032	10.01	4.80
30	14/03/2017	4.82	17.4	0.066	0.018	0.004	0.005	0.017	<d.l.	<d.l.	0.061	8.80	24.90
30	09/05/2017	4.84	14.9	0.059	0.012	0.004	0.004	0.017	<d.l.	0.013	0.067	8.71	6.40
30	04/07/2017	5.17	13.3	0.064	0.023	0.004	0.006	0.015	<d.l.	0.002	0.062	11.03	6.40
30	29/08/2017	4.55	21.7	0.056	0.029	0.002	0.005	0.023	<d.l.	<d.l.	0.044	19.21	1.75
30	07/11/2017	4.52	27.7	0.088	0.110	0.004	0.009	0.023	<d.l.	0.019	0.030	19.04	2.30
30	15/01/2018	4.52	17.8	0.033	0.010	0.004	0.007	0.029	<d.l.	<d.l.	0.083	12.55	30.00
30	13/03/2018	4.47	16.4	0.051	0.014	0.003	0.002	0.015	<d.l.	<d.l.	0.047	8.71	14.20
30	09/05/2018	4.72	15.9	0.062	0.012	0.003	0.003	0.017	<d.l.	<d.l.	0.098	11.72	7.50
30	04/07/2018	4.75	17.5	0.074	0.016	0.004	0.004	0.017	<d.l.	<d.l.	0.060	11.23	2.40
30	28/08/2018	4.77	42.8	0.048	0.149	0.009	0.014	0.017	0.096	0.054	0.008	19.85	1.40
30	23/10/2018	4.47	42.9	0.043	0.158	0.007	0.014	0.026	0.018	0.078	0.026	25.96	1.80
30	07/01/2019	4.35	33.7	0.065	0.051	0.006	0.008	0.028	<d.l.	0.014	0.034	23.15	6.60
30	06/03/2019	4.47	27.7	0.057	0.035	0.005	0.004	0.026	<d.l.	0.007	0.053	16.36	22.20
30	30/04/2019	4.50	23.6	0.077	0.024	0.006	0.005	0.021	<d.l.	<d.l.	0.068	13.36	9.00
30	24/06/2019	4.53	24.1	0.085	0.019	0.005	0.006	0.020	<d.l.	0.005	0.077	12.80	2.20
30	20/08/2019	4.42	36.3	0.067	0.093	0.008	0.008	0.026	<d.l.	0.035	0.031	22.71	3.20
30	29/10/2019	5.09	29.9	0.085	0.088	0.009	0.014	0.037	0.005	0.014	0.061	24.90	6.80
30	06/01/2020	4.78	22.7	0.116	0.030	0.005	0.004	0.023	<d.l.	0.008	0.128	14.10	16.00
30	03/03/2020	4.88	20.1	0.098	0.022	0.004	0.004	0.021	<d.l.	0.006	0.103	16.08	14.40
30	18/05/2020	4.95	17.4	0.074	0.029	0.003	0.005	0.020	<d.l.	0.008	0.051	17.84	9.50

30	07/07/2020	5.02	17.9	0.068	0.038	0.004	0.006	0.021	0.007	0.009	0.032	16.98	4.05
30	27/10/2020	4.60	26.2	0.053	0.072	0.004	0.006	0.026	0.005	0.016	0.036	22.71	8.05
30	18/12/2020	4.42	26.7	0.076	0.025	0.004	0.006	0.028	<d.l.	0.013	0.087	22.51	3.55
30	02/03/2021	4.70	18.7	0.067	0.017	0.003	0.004	0.027	<d.l.	0.003	0.073	11.52	22.40
30	27/04/2021	4.63	21.3	0.063	0.023	0.004	0.004	0.027	<d.l.	0.013	0.097	10.73	1.30
30	22/06/2021	4.95	12.4	0.039	0.016	0.003	0.004	0.012	<d.l.	0.006	0.041	5.94	13.00
30	17/08/2021	4.61	17.3	0.060	0.015	0.003	0.003	0.029	<d.l.	<d.l.	0.087	12.77	4.30
30	26/10/2021	4.57	48.1	0.050	0.183	0.008	0.018	0.045	0.030	0.025	0.044	40.71	0.60
30	07/01/2022	4.42	25.9	0.054	0.031	0.004	0.005	0.024	<d.l.	0.003	0.065	18.52	9.00
30	15/02/2022	4.45	23.9	0.064	0.017	0.004	0.001	0.019	<d.l.	0.001	0.086	10.37	4.80
30	13/04/2022	4.49	23.1	0.071	0.018	0.002	<d.l.	0.021	<d.l.	0.004	0.104	10.72	4.70
30	21/06/2022	5.21	47.8	0.082	0.198	0.013	0.023	0.050	0.055	0.006	0.017	44.30	0.10
30	20/07/2022	4.38	44.8	0.057	0.172	0.007	0.015	0.039	0.002	0.022	0.043	48.65	0.50
30	30/08/2022	4.10	94.1	0.083	0.301	0.018	0.026	0.072	0.033	0.117	0.054	66.81	0.10
30	10/11/2022	4.22	40.6	0.064	0.086	0.004	0.008	0.042	0.017	0.014	0.048	36.25	10.50
30	17/01/2023	4.29	35.1	0.107	0.024	0.008	0.003	0.032	0.008	<d.l.	0.126	17.66	10.00
30	14/03/2023	4.45	32.2	0.102	0.024	0.006	0.003	0.022	<d.l.	0.007	0.128	12.88	5.30
30	09/05/2023	4.79	26.0	0.087	0.029	0.009	0.004	0.024	0.027	0.004	0.114	14.01	6.35
30	04/07/2023	4.46	25.6	0.061	0.034	0.005	0.005	0.029	<d.l.	0.008	0.069	18.73	1.30
30	29/08/2023	4.33	27.2	0.055	0.025	0.004	0.002	0.037	<d.l.	0.004	0.055	25.64	3.20
30	07/11/2023	4.39	23.9	0.039	0.027	0.004	0.003	0.027	<d.l.	0.004	0.042	19.32	3.90
60	20/01/2015	4.96	17.7	0.089	0.009	0.003	0.005	0.009	0.001	0.006	0.111	4.87	18.00
60	31/03/2015	5.12	15.5	0.087	0.008	0.003	0.008	0.009	0.001	0.007	0.116	4.91	5.00
60	26/05/2015	4.91	15.5	0.071	0.007	0.002	0.003	0.012	0.001	0.012	0.084	5.10	9.60
60	21/07/2015	6.00	19.1	0.067	0.034	0.003	0.006	0.007	0.058	0.011	0.041	9.65	1.00
60	15/09/2015	5.18	45.5	0.067	0.148	0.011	0.038	0.016	0.087	0.151	0.024	18.91	1.00
60	10/11/2015	6.15	31.0	0.060	0.124	0.008	0.032	0.013	0.003	0.008	0.025	20.17	0.15
60	19/01/2016	4.74	19.0	0.039	0.033	0.003	0.007	0.018	0.008	0.011	0.031	12.27	12.60
60	15/03/2016	4.80	20.1	0.080	0.018	0.004	0.005	0.022	0.001	0.008	0.086	8.92	14.80
60	10/05/2016	4.92	14.5	0.063	0.009	0.002	0.002	0.013	0.001	0.004	0.093	5.59	2.50
60	05/07/2016	5.01	13.7	0.068	0.009	0.001	0.004	0.014	0.001	0.005	0.108	6.92	3.70
60	30/08/2016	5.41	23.3	0.073	0.047	0.006	0.017	0.014	0.041	0.022	0.062	12.80	0.25
60	08/11/2016	4.71	47.3	0.050	0.195	0.009	0.020	0.030	0.041	0.152	0.024	23.82	5.40
60	17/01/2017	4.93	15.0	0.047	0.040	0.002	0.006	0.016	<d.l.	0.002	0.041	9.80	1.50
60	14/03/2017	5.04	17.3	0.073	0.020	0.005	0.009	0.015	<d.l.	0.011	0.096	4.76	10.40
60	09/05/2017	4.76	20.9	0.068	0.021	0.006	0.009	0.016	<d.l.	0.030	0.087	4.85	2.90
60	04/07/2017	5.57	13.8	0.060	0.023	0.005	0.011	0.013	<d.l.	<d.l.	0.075	17.95	4.40
60	29/08/2017	5.17	17.5	0.040	0.040	0.004	0.014	0.014	<d.l.	0.005	0.055	12.20	0.70
60	07/11/2017	4.40	58.4	0.082	0.125	0.015	0.015	0.028	0.153	0.050	0.089	24.40	0.30
60	15/01/2018	4.80	17.7	0.063	0.015	0.004	0.008	0.012	<d.l.	<d.l.	0.121	6.27	16.10
60	13/03/2018	4.79	18.4	0.079	0.010	0.003	0.013	0.011	<d.l.	0.009	0.132	4.49	11.10
60	09/05/2018	5.02	17.8	0.090	0.009	0.004	0.010	0.014	<d.l.	<d.l.	0.129	4.64	4.60
60	04/07/2018	5.29	15.9	0.074	0.025	0.007	0.011	0.011	<d.l.	0.006	0.096	5.95	1.50
60	28/08/2018	5.71	22.5	0.044	0.096	0.006	0.007	0.008	0.049	<d.l.	0.012	10.71	0.90
60	23/10/2018	4.67	32.0	0.039	0.093	0.007	0.013	0.013	0.046	0.035	0.020	14.36	1.70
60	07/01/2019	4.56	26.5	0.053	0.051	0.005	0.009	0.011	0.004	0.040	0.044	6.59	5.40
60	06/03/2019	4.96	15.9	0.061	0.017	0.005	0.006	0.011	<d.l.	0.015	0.065	4.30	5.20
60	30/04/2019	4.82	18.2	0.072	0.015	0.006	0.006	0.013	<d.l.	<d.l.	0.061	4.32	9.40

60	24/06/2019	4.87	19.1	0.075	0.022	0.008	0.008	0.007	0.012	0.012	0.089	4.88	0.50
60	20/08/2019	6.32	21.4	0.029	0.070	0.013	0.026	0.006	0.022	<d.l.	0.010	13.85	1.10
60	29/10/2019	4.97	19.4	0.070	0.024	0.008	0.008	0.013	0.012	0.006	0.091	7.04	3.30
60	06/01/2020	4.91	17.2	0.085	0.015	0.004	0.005	0.012	<d.l.	<d.l.	0.123	4.05	6.90
60	03/03/2020	4.82	21.5	0.097	0.012	0.004	0.006	0.014	<d.l.	0.006	0.147	5.25	11.70
60	18/05/2020	4.87	18.9	0.085	0.011	0.003	0.006	0.014	<d.l.	<d.l.	0.118	6.04	3.75
60	07/07/2020	4.93	16.2	0.074	0.013	0.003	0.006	0.012	<d.l.	<d.l.	0.115	6.17	1.70
60	18/12/2020	4.94	19.6	0.087	0.017	0.004	0.008	0.009	<d.l.	0.013	0.119	4.59	0.80
60	02/03/2021	4.79	21.5	0.089	0.009	0.003	0.006	0.018	<d.l.	0.043	0.133	4.26	25.40
60	27/04/2021	4.85	21.0	0.088	0.010	0.005	0.006	0.017	<d.l.	0.061	0.122	3.28	1.80
60	22/06/2021	5.00	17.3	0.087	0.011	0.004	0.005	0.015	<d.l.	0.022	0.132	4.02	6.30
60	17/08/2021	5.04	17.8	0.093	0.014	0.004	0.007	0.014	<d.l.	0.038	0.146	4.06	3.20
60	07/01/2022	4.81	19.7	0.078	0.013	0.000	0.004	0.013	<d.l.	0.018	0.120	4.91	6.10
60	15/02/2022	4.74	20.7	0.077	0.011	0.004	0.005	0.015	<d.l.	0.030	0.123	4.87	5.20
60	13/04/2022	4.79	19.6	0.080	0.011	0.002	0.007	0.015	<d.l.	0.027	0.132	4.18	3.70
60	21/06/2022	6.64	24.1	0.077	0.034	0.004	0.008	0.007	0.093	0.020	0.119	7.65	0.05
60	20/07/2022	4.57	28.6	0.067	0.044	0.006	0.008	0.025	0.017	0.036	0.061	17.33	1.10
60	30/08/2022	5.09	30.9	0.092	0.111	0.008	0.011	0.032	<d.l.	0.027	0.039	26.32	0.08
60	10/11/2022	4.56	28.3	0.064	0.065	0.004	0.010	0.036	0.006	0.017	0.082	20.59	7.40
60	17/01/2023	4.84	16.7	0.070	0.016	0.003	0.005	0.013	<d.l.	0.008	0.125	5.32	10.40
60	14/03/2023	4.99	15.5	0.067	0.014	0.003	0.006	0.013	<d.l.	0.016	0.118	5.06	4.90
60	09/05/2023	5.10	13.4	0.065	0.010	0.003	0.031	0.013	<d.l.	0.006	0.129	5.68	6.35
60	04/07/2023	4.94	17.9	0.063	0.031	0.004	0.008	0.019	<d.l.	0.010	0.097	10.07	1.30
60	29/08/2023	5.02	14.1	0.050	0.025	0.003	0.008	0.017	<d.l.	0.007	0.075	9.64	2.80
60	07/11/2023	4.92	15.5	0.046	0.028	0.004	0.008	0.017	<d.l.	0.005	0.065	10.60	1.60

Table S1 : pH, conductivity ($\mu\text{S}/\text{cm}$), Dissolved Organic Carbon (DOC in ppm-C), concentrations (mmol/L) in ions (Na^+ , K^+ , Mg^{2+} , Ca^{2+} , Al, Si, NH_4^+ and NO_3^-), and volumes of samples collected (L) for the 2015-2023 period in soil solutions at 5, 10, 30, 60 cm depth.

Date (dd/mm/yyyy)	(uS/cm)		mmol/L								ppm-C
	pH	Conductivity	Na+	K+	Mg2+	Ca2+	Al	NH4+	NO3-	Si	DOC
14/10/2014	4.78	51.40	0.065	0.092	0.023	0.063	0.001	0.049	0.172	0.004	10.02
28/10/2014	4.88	40.10	0.117	0.060	0.016	0.028	0.001	0.043	0.059	0.002	8.26
12/11/2014	4.91	23.29	0.061	0.037	0.008	0.023	0.010	0.021	0.069	0.001	4.57
25/11/2014	4.78	38.20	0.053	0.047	0.045	0.029	0.001	0.035	0.119	0.002	6.81
19/12/2014	5.39	22.23	0.032	0.044	0.006	0.015	0.001	0.053	0.056	0.002	8.56
05/01/2015	4.60	24.88	0.042	0.030	0.007	0.013	0.001	0.015	0.035	0.001	5.55
20/01/2015	5.00	17.24	0.048	0.032	0.006	0.010	0.001	0.007	0.020	0.001	6.95
03/02/2015	6.30	83.60	0.035	0.131	0.007	0.022	0.002	0.201	0.001	0.009	24.52
17/02/2015	3.77	90.50	0.043	0.024	0.009	0.020	0.000	0.086	0.086	0.002	5.60
03/03/2015	3.42	181.10	0.087	0.057	0.020	0.044	0.001	0.079	0.138	0.003	10.83
17/03/2015	3.80	70.10	0.022	0.011	0.003	0.008	0.001	0.040	0.011	0.002	4.92
31/03/2015	4.19	54.30	0.040	0.035	0.006	0.015	0.001	0.159	0.126	0.002	9.28
14/04/2015	4.85	22.90	0.063	0.021	0.006	0.008	0.001	0.046	0.025	0.001	5.05
28/04/2015	4.19	24.45	0.023	0.034	0.005	0.014	0.001	0.084	0.101	0.001	5.33
13/05/2015	4.76	11.68	0.009	0.020	0.002	0.004	0.001	0.002	0.014	0.001	4.65
26/05/2015	4.58	43.40	0.050	0.097	0.013	0.029	0.002	0.059	0.112	0.003	11.63
09/06/2015	4.12	68.40	0.040	0.156	0.017	0.041	0.002	0.001	0.134	0.005	56.96
23/06/2015	5.02	14.94	0.018	0.046	0.005	0.010	0.001	0.001	0.015	0.003	11.40
21/07/2015	6.59	116.50	0.072	0.270	0.042	0.142	0.003	0.339	0.498	0.003	16.29
04/08/2015	5.93	66.80	0.047	0.120	0.020	0.079	0.002	0.219	0.270	0.006	15.32
18/08/2015	5.66	30.78	0.017	0.062	0.008	0.027	0.001	0.119	0.131	0.004	9.12
01/09/2015	5.56	60.90	0.024	0.114	0.016	0.052	0.002	0.243	0.322	0.005	15.49
15/09/2015	5.80	69.40	0.078	0.116	0.025	0.072	0.001	0.204	0.310	0.005	13.46
29/09/2015	5.06	33.14	0.047	0.056	0.011	0.031	0.001	0.074	0.122	0.003	12.96
13/10/2015	4.74	67.00	0.061	0.089	0.022	0.071	0.002	0.180	0.338	0.006	16.99
27/10/2015	2.94	529.00	0.071	0.170	0.043	0.131	0.003	0.207	0.407	0.015	20.83
10/11/2015	4.33	72.10	0.038	0.125	0.016	0.048	0.001	0.159	0.258	0.005	10.77
24/11/2015	4.87	12.88	0.016	0.035	0.003	0.008	0.000	0.010	0.029	0.001	6.46
24/11/2015	5.16	8.16	0.009	0.019	0.002	0.004	0.000	0.002	0.017	0.001	3.56
07/12/2015	4.17	42.20	0.040	0.046	0.006	0.028	0.005	0.001	0.020	0.003	8.50
18/12/2015	4.34	58.00	0.116	0.084	0.018	0.039	0.001	0.038	0.116	0.004	12.68
04/01/2016	4.50	54.90	0.111	0.063	0.017	0.051	0.001	0.071	0.161	0.004	8.31
19/01/2016	4.84	20.73	0.061	0.027	0.006	0.010	0.000	0.011	0.019	0.002	5.82
02/02/2016	4.22	32.10	0.039	0.024	0.005	0.009	0.001	0.002	0.024	0.001	6.31
16/02/2016	4.06	40.20	0.038	0.020	0.004	0.015	0.002	0.001	0.015	0.001	4.86
01/03/2016	3.73	84.20	0.026	0.033	0.005	0.012	0.001	0.034	0.042	0.003	10.58
15/03/2016	3.80	78.10	0.034	0.028	0.008	0.018	0.000	0.045	0.069	0.003	4.95
29/03/2016	3.52	136.80	0.031	0.032	0.011	0.026	0.001	0.084	0.108	0.004	7.80
12/04/2016	3.56	142.60	0.067	0.046	0.016	0.051	0.002	0.072	0.129	0.005	11.88
26/04/2016	4.12	40.40	0.018	0.021	0.006	0.018	0.001	0.028	0.062	0.002	7.64
10/05/2016	4.23	36.20	0.019	0.018	0.006	0.022	0.000	0.044	0.054	0.001	3.40
24/05/2016	4.11	49.40	0.031	0.039	0.009	0.024	0.001	0.038	0.086	0.003	9.49
07/06/2016	4.20	34.60	0.010	0.047	0.004	0.008	0.000	0.027	0.023	0.002	5.59
21/06/2016	4.70	17.10	0.011	0.041	0.002	0.006	0.000	0.016	0.015	0.003	8.62
05/07/2016	5.02	13.78	0.017	0.047	0.002	0.009	0.001	0.008	0.025	0.003	9.08

19/07/2016	5.46	16.39	0.019	0.060	0.003	0.014	0.001	0.005	0.030	0.004	8.69
02/08/2016	5.84	19.70	0.013	0.062	0.006	0.016	0.001	0.065	0.058	0.004	6.78
16/08/2016	5.37	18.79	0.025	0.057	0.004	0.013	0.001	0.042	0.048	0.002	10.49
30/08/2016	6.13	47.50	0.068	0.106	0.017	0.056	0.001	0.097	0.173	0.005	12.79
13/09/2016	4.67	49.80	0.061	0.136	0.017	0.050	0.002	0.076	0.060	0.006	67.68
27/09/2016	5.08	21.77	0.039	0.076	0.001	0.025	0.001	0.044	0.042	0.002	34.48
11/10/2016	3.48	175.20	0.101	0.162	0.037	0.097	0.002	0.040	0.360	0.012	61.82
25/10/2016	4.49	25.81	0.027	0.045	0.006	0.015	0.001	0.015	0.057	0.003	9.65
08/11/2016	4.46	34.60	0.025	0.062	0.007	0.019	<l.d.	0.046	0.099	0.003	8.64
22/11/2016	4.40	26.29	0.027	0.047	0.005	0.010	<l.d.	<l.d.	0.037	0.002	6.43
06/12/2016	3.17	349.00	0.093	0.223	0.042	0.101	0.003	0.318	0.485	0.015	22.83
19/12/2016	3.89	146.40	0.120	0.230	0.050	0.106	0.002	0.173	0.422	0.007	20.47
04/01/2017	3.74	164.20	0.137	0.230	0.047	0.120	0.003	0.109	0.358	0.009	25.11
17/01/2017	4.48	48.20	0.129	0.067	0.015	0.020	0.000	0.020	0.082	0.002	6.16
31/01/2017	4.14	57.00	0.077	0.049	0.013	0.033	0.001	0.068	0.144	0.002	6.63
14/02/2017	4.59	29.72	0.038	0.031	0.006	0.018	0.000	0.051	0.074	0.002	4.95
27/02/2017	4.48	40.90	0.038	0.040	0.011	0.030	0.001	0.072	0.104	0.000	7.46
14/03/2017	5.12	13.54	0.038	0.016	0.004	0.009	0.000	0.015	0.021	<l.d.	3.55
28/03/2017	5.76	11.37	0.018	0.015	0.004	0.006	0.000	0.049	0.038	<l.d.	6.92
25/04/2017	4.08	76.90	0.042	0.044	0.012	0.036	0.001	0.191	0.182	0.001	12.06
09/05/2017	4.52	31.60	0.019	0.025	0.005	0.014	0.000	0.090	0.100	0.001	4.82
23/05/2017	3.73	62.60	0.012	0.030	0.006	0.016	0.001	0.045	0.068	0.003	6.16
06/06/2017	5.50	20.56	0.015	0.052	0.006	0.018	0.001	0.033	0.025	0.003	9.74
20/06/2017	4.51	29.82	0.022	0.071	0.006	0.022	0.001	<l.d.	0.026	0.003	117.40
04/07/2017	6.12	24.44	0.033	0.099	0.014	0.033	0.001	<l.d.	0.002	0.006	30.65
18/07/2017	5.84	38.30	0.019	0.064	0.008	0.093	0.001	0.044	0.054	0.004	11.22
01/08/2017	5.25	22.91	0.020	0.041	0.006	0.037	0.001	0.034	0.036	0.003	8.34
16/08/2017	5.15	40.90	0.024	0.046	0.010	0.081	0.001	0.068	0.092	0.004	9.22
29/08/2017	5.52	28.38	0.022	0.047	0.005	0.040	0.001	0.072	0.065	0.005	13.23
12/09/2017	5.14	38.20	0.044	0.061	0.010	0.047	0.001	0.077	0.124	0.005	9.21
27/09/2017	4.80	30.90	0.040	0.050	0.005	0.057	0.001	<l.d.	0.025	0.003	7.60
10/10/2017	5.01	20.31	0.047	0.088	0.006	0.019	0.000	0.022	0.061	0.003	6.92
24/10/2017	4.48	76.80	0.120	0.152	0.016	0.122	0.001	<l.d.	0.118	0.006	11.69
07/11/2017	4.84	29.70	0.096	0.079	0.008	0.022	0.000	0.007	0.056	0.003	7.23
21/11/2017	4.93	16.38	0.026	0.023	0.003	0.021	0.000	<l.d.	0.025	0.002	3.58
05/12/2017	4.52	56.60	0.034	0.037	0.006	0.123	0.001	0.008	0.060	0.003	4.97
19/12/2017	4.71	18.75	0.050	0.018	0.004	0.009	0.000	0.014	0.038	0.001	3.55
04/01/2018	4.83	20.24	0.055	0.022	0.005	0.021	0.000	0.006	0.014	0.001	3.83
15/01/2018	5.19	10.91	0.028	0.014	0.003	0.014	0.000	<l.d.	0.012	0.001	3.73
29/01/2018	4.98	14.10	0.031	0.017	0.004	0.014	0.000	0.003	0.023	0.001	2.64
13/02/2018	4.16	92.70	0.021	0.020	0.003	0.276	0.001	0.002	0.018	0.003	6.80
27/02/2018	4.24	58.00	0.057	0.031	0.010	0.113	0.001	0.051	0.104	0.002	4.60
13/03/2018	3.57	95.30	0.056	0.024	0.011	0.116	0.001	0.050	0.104	0.003	4.16
27/03/2018	4.55	30.40	0.033	0.019	0.005	0.022	0.000	0.103	0.087	0.002	4.45
10/04/2018	4.78	32.80	0.048	0.039	0.009	0.036	0.001	0.076	0.094	0.002	8.70
24/04/2018	5.72	41.30	0.033	0.060	0.009	0.043	0.001	0.149	0.188	0.003	6.94
09/05/2018	5.61	40.20	0.030	0.077	0.010	0.043	0.001	0.150	0.163	0.004	11.12
22/05/2018	5.74	14.82	0.008	0.057	0.004	0.010	0.000	0.044	0.029	0.000	4.22

05/06/2018	4.93	26.77	0.008	0.055	0.005	0.039	0.001	0.041	0.056	0.002	4.52
19/06/2018	5.39	16.83	0.007	0.052	0.005	0.019	0.001	0.032	0.049	0.003	4.52
17/07/2018	6.14	94.40	0.045	0.299	0.040	0.172	0.004	0.088	0.037	0.010	25.78
31/07/2018	6.22	43.00	0.022	0.114	0.012	0.042	0.002	0.152	0.076	0.005	15.86
14/08/2018	4.62	82.60	0.028	0.247	0.026	0.082	0.005	0.180	0.265	0.011	38.09
28/08/2018	5.31	40.80	0.029	0.120	0.019	0.067	0.002	0.016	0.133	0.006	24.94
11/09/2018	4.80	26.84	0.021	0.069	0.011	0.031	0.001	0.027	0.100	0.004	15.57
25/09/2018	5.04	21.92	0.015	0.054	0.006	0.020	0.001	0.041	0.082	0.002	10.12
06/11/2018	4.93	46.40	0.048	0.084	0.015	0.043	0.001	0.109	0.227	0.003	9.01
20/11/2018	4.62	79.10	0.109	0.140	0.033	0.077	0.002	0.125	0.369	0.007	19.28
04/12/2018	4.75	40.80	0.048	0.095	0.011	0.038	0.001	0.061	0.152	0.004	17.19
19/12/2018	5.03	19.23	0.059	0.050	0.005	0.011	0.000	<l.d.	0.018	0.001	7.00
07/01/2019	5.28	14.96	0.044	0.055	0.005	0.009	0.000	<l.d.	0.010	0.002	14.93
21/01/2019	4.80	16.38	0.034	0.018	0.006	0.010	0.000	<l.d.	0.027	0.001	2.24
05/02/2019	4.64	37.60	0.081	0.071	0.011	0.030	0.001	<l.d.	0.088	0.003	8.15
19/02/2019	5.02	11.51	0.031	0.018	0.004	0.008	0.000	<l.d.	0.018	0.002	4.35
06/03/2019	5.18	38.70	0.072	0.058	0.010	0.018	0.001	0.115	0.127	0.002	9.87
19/03/2019	5.19	18.63	0.070	0.024	0.008	0.008	0.000	0.010	0.016	0.002	5.77
02/04/2019	4.52	21.21	0.046	0.021	0.004	0.006	0.000	0.051	0.039	0.002	3.25
16/04/2019	5.38	24.50	0.035	0.033	0.008	0.015	0.001	0.089	0.099	0.002	9.45
30/04/2019	5.44	32.90	0.044	0.058	0.010	0.027	0.001	0.098	0.132	0.003	12.43
14/05/2019	5.05	19.60	0.030	0.034	0.007	0.011	0.001	0.001	0.042	0.002	10.70
28/05/2019	5.03	26.59	0.018	0.036	0.009	0.019	0.000	0.090	0.097	0.002	8.17
11/06/2019	5.14	23.96	0.036	0.062	0.014	0.033	0.001	0.055	0.105	0.003	13.01
24/06/2019	5.60	15.54	0.017	0.039	0.008	0.028	0.001	0.009	0.042	0.003	8.82
23/07/2019	6.36	113.90	0.050	0.301	0.051	0.151	0.003	0.358	0.292	0.010	42.52
06/08/2019	6.13	24.10	0.013	0.054	0.010	0.027	0.001	0.077	0.072	0.002	10.86
20/08/2019	5.97	21.51	0.023	0.062	0.009	0.023	0.001	0.038	0.048	0.002	10.38
03/09/2019	6.25	25.00	0.015	0.051	0.008	0.025	0.000	0.081	0.093	0.001	4.94
17/09/2019	5.58	88.50	0.133	0.184	0.030	0.080	0.001	0.166	0.314	0.003	22.62
01/10/2019	5.56	40.70	0.078	0.091	0.014	0.041	0.001	0.075	0.108	0.004	15.64
15/10/2019	5.57	12.04	0.037	0.037	0.006	0.010	<l.d.	<l.d.	0.005	0.001	6.92
29/10/2019	5.83	16.00	0.035	0.065	0.009	0.015	<l.d.	<l.d.	0.020	0.003	8.91
12/11/2019	5.53	17.70	0.021	0.071	0.006	0.012	0.000	0.017	0.046	0.002	7.47
26/11/2019	4.97	21.62	0.047	0.045	0.008	0.015	0.000	0.005	0.066	0.001	3.75
10/12/2019	5.85	12.04	0.027	0.050	<l.d.	0.006	0.000	<l.d.	0.010	0.002	5.68
19/12/2019	5.62	21.35	0.076	0.070	0.008	0.007	0.000	<l.d.	<l.d.	0.001	4.09
06/01/2020	5.76	12.68	0.058	0.029	0.004	0.006	0.000	<l.d.	0.013	0.001	4.59
21/01/2020	5.61	39.20	0.136	0.064	0.016	0.025	0.000	0.017	0.091	0.003	4.82
04/02/2020	6.04	10.36	0.036	0.031	0.004	0.005	0.000	<l.d.	0.007	0.002	6.33
18/02/2020	6.14	17.44	0.074	0.048	0.008	0.009	<l.d.	<l.d.	0.008	0.001	4.83
03/03/2020	6.03	18.25	0.060	0.039	0.006	0.021	0.000	<l.d.	0.006	0.002	4.78
18/05/2020	6.74	51.00	0.061	0.159	0.014	0.037	0.001	0.104	0.048	0.004	16.50
28/05/2020	6.65	40.10	0.032	0.183	0.012	0.035	0.001	0.013	0.009	0.004	12.72
09/06/2020	6.02	19.18	0.023	0.109	0.005	0.010	0.001	<l.d.	<l.d.	0.003	18.29
23/06/2020	5.49	9.42	0.011	0.046	0.004	0.005	0.000	<l.d.	<l.d.	0.003	15.43
07/07/2020	6.14	20.45	0.027	0.113	0.005	0.013	0.001	<l.d.	<l.d.	0.006	32.83
20/07/2020	5.75	16.85	0.027	0.077	0.006	0.014	0.001	<l.d.	<l.d.	0.006	16.54

04/08/2020	6.51	32.20	0.023	0.122	0.012	0.039	0.001	0.037	0.042	0.006	14.95
18/08/2020	6.32	32.90	0.036	0.083	0.011	0.046	0.001	0.091	0.103	0.004	16.95
01/09/2020	5.69	22.30	0.041	0.106	0.008	0.026	0.001	<l.d.	0.021	0.003	18.77
15/09/2020	6.37	74.30	0.055	0.212	0.040	0.143	0.001	0.060	0.017	0.007	23.51
30/09/2020	5.75	17.84	0.030	0.039	0.007	0.026	0.000	0.008	0.039	0.002	8.43
13/10/2020	5.86	12.28	0.033	0.040	0.004	0.011	0.000	<l.d.	0.004	0.002	9.56
27/10/2020	6.06	20.35	0.045	0.062	0.007	0.025	0.001	<l.d.	0.014	0.004	10.68
09/11/2020	5.85	16.88	0.037	0.034	0.004	0.029	0.000	<l.d.	0.004	0.003	8.11
24/11/2020	5.84	30.50	0.074	0.050	0.009	0.052	0.001	<l.d.	0.016	0.004	9.82
08/12/2020	5.76	90.90	0.056	0.102	0.015	0.213	0.001	0.108	0.123	0.006	7.87
18/12/2020	5.41	13.03	0.018	0.021	0.003	0.021	0.000	0.001	0.024	0.002	4.60
04/01/2021	6.16	24.50	0.032	0.065	0.004	0.024	0.001	0.057	0.003	0.003	15.04
19/01/2021	5.43	15.52	0.015	0.002	0.003	0.045	0.000	0.000	0.018	0.001	2.69
02/02/2021	5.51	11.90	0.017	0.002	0.003	0.020	0.000	<l.d.	0.012	0.001	2.82
16/02/2021	6.46	26.30	0.049	0.034	0.010	0.058	0.000	<l.d.	0.015	0.003	4.68
02/03/2021	7.00	67.90	0.118	0.066	0.022	0.173	0.001	0.016	0.060	0.012	8.97
16/03/2021	6.09	36.80	0.059	0.066	0.013	0.070	0.002	0.040	0.058	0.009	7.98
30/03/2021	6.05	15.34	0.033	0.011	0.006	0.020	0.000	0.026	0.032	0.002	1.01
13/04/2021	6.26	53.30	0.149	0.042	0.024	0.053	0.001	0.102	0.111	0.004	3.93
27/04/2021	6.23	18.64	0.026	0.045	0.010	0.025	0.001	0.006	0.049	0.004	2.30
11/05/2021	5.92	17.75	0.038	0.041	0.007	0.023	0.001	0.007	0.026	0.004	5.77
25/05/2021	5.59	16.72	0.034	0.035	0.004	0.028	0.001	<l.d.	0.004	0.003	5.27
08/06/2021	5.79	12.57	0.027	0.038	0.005	0.015	0.002	0.002	0.012	0.004	4.88
22/06/2021	6.20	16.60	0.008	0.034	0.006	0.023	0.001	0.048	0.026	0.003	4.01
06/07/2021	6.05	10.61	0.008	0.019	0.003	0.013	0.000	0.031	0.016	0.003	2.77
20/07/2021	5.92	5.05	0.006	0.011	0.003	0.008	0.000	0.007	0.008	0.002	3.27
03/08/2021	6.10	20.19	0.014	0.035	0.007	0.035	0.001	0.035	0.036	0.004	4.11
17/08/2021	5.78	21.22	0.041	0.032	0.008	0.026	0.001	0.033	0.034	0.003	5.89
31/08/2021	5.43	22.20	0.043	0.052	0.007	0.021	0.001	0.012	0.034	0.007	10.96
14/09/2021	6.39	29.30	0.024	0.069	0.009	0.032	0.001	0.062	0.100	0.004	9.10
28/09/2021	5.70	23.80	0.021	0.058	0.010	0.031	0.001	0.018	0.075	0.005	9.49
12/10/2021	5.16	15.80	0.046	0.027	0.007	0.014	0.000	<l.d.	0.025	0.002	4.33
26/10/2021	5.05	28.90	0.094	0.035	0.012	0.022	0.001	0.009	0.055	0.003	5.75
09/11/2021	4.33	27.70	0.004	0.001	0.000	0.000	0.000	0.004	0.016	0.002	4.77
23/11/2021	5.46	14.63	0.040	0.052	0.002	0.005	0.001	<l.d.	0.034	0.003	8.32
07/12/2021	5.35	6.09	0.014	0.010	0.000	0.002	0.000	<l.d.	0.011	0.001	1.98
20/12/2021	5.22	8.64	0.028	0.009	0.002	0.004	<l.d.	<l.d.	0.011	0.001	1.66
04/01/2022	5.49	6.51	0.023	0.012	0.001	0.002	0.000	<l.d.	0.003	0.001	2.57
18/01/2022	5.64	5.97	0.020	0.007	0.001	<l.d.	0.000	0.001	0.007	0.001	1.26
01/02/2022	5.16	27.60	0.077	0.040	0.015	0.017	0.000	0.023	0.074	0.002	6.70
15/02/2022	5.63	15.05	0.060	0.015	0.006	0.008	<l.d.	0.006	0.016	0.001	1.71
01/03/2022	5.43	18.81	0.054	0.009	0.007	0.028	0.000	0.005	0.007	0.001	1.72
15/03/2022	5.98	29.30	0.042	0.015	0.007	0.021	0.001	0.124	0.095	0.002	4.19
29/03/2022	7.02	114.80	0.204	0.080	0.038	0.225	0.002	0.173	0.286	0.014	15.07
13/04/2022	6.56	14.52	0.011	0.011	0.002	0.030	0.000	0.030	0.029	0.003	2.26
26/04/2022	6.37	19.26	0.009	0.016	0.005	0.033	0.001	0.057	0.051	0.002	3.73
10/05/2022	6.28	21.09	0.009	0.024	0.003	0.013	0.001	0.087	0.072	0.001	2.65
24/05/2022	6.12	26.20	0.020	0.048	0.014	0.047	0.002	0.023	0.074	0.004	24.56

07/06/2022	6.06	20.35	0.019	0.040	0.013	0.046	0.001	<l.d.	0.046	0.003	18.80
21/06/2022	6.28	12.20	0.026	0.026	0.006	0.018	0.001	<l.d.	0.013	0.002	6.75
05/07/2022	6.27	12.75	0.007	0.020	0.005	0.013	0.000	0.043	0.023	0.001	3.52
02/08/2022	6.84	74.70	0.022	0.121	0.015	0.044	0.001	0.383	0.098	0.004	12.01
16/08/2022	6.71	129.00	0.033	0.290	0.045	0.076	0.002	0.597	0.118	0.005	25.81
30/08/2022	6.37	34.50	0.018	0.078	0.009	0.025	0.001	0.135	0.100	0.003	11.22
13/09/2022	6.08	17.30	0.015	0.040	0.005	0.013	0.000	0.045	0.030	0.002	5.89
27/09/2022	5.72	8.68	0.013	0.025	0.003	0.003	0.000	0.006	0.014	0.001	2.68
11/10/2022	5.32	4.35	0.009	0.002	0.001	0.002	<l.d.	0.003	0.008	0.001	0.64

Table S2 : pH, conductivity ($\mu\text{S}/\text{cm}$), Dissolved Organic Carbon (DOC in ppm-C), concentrations (mmol/L) in ions (Na^+ , K^+ , Mg^{2+} , Ca^{2+} , Al, Si, NH_4^+ and NO_3^-) for the 2015-2022 period in throughfall.