North Wyke Farm Platform

DATA QUALITY AND SUMMARY STATISTICS

SUMMARY OF DAILY STATISTICS - NON-ADJUSTED DATA

Data Range: 2012-01-01 to 2023-12-31

This report complements the daily means dataset published on the Rothamsted Research data repository

Data Version: 3

Report produced on: 14 July 2025
Compiled by: Jane Hawkins using R version 4.2.1 (2022-06-23 ucrt)

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1 Introduction

This report includes tables and graphics of summary statistics for the daily means data set 'NWFP_Daily_Means_2012-01-01_2023-12-31.csv' published on the Rothamsted Research data repository, hosted on CKAN. The published data set was calculated from yearly csv files (2012-2023) of 15 minute time steps for the variables given in Table 1 that were downloaded from the North Wyke Farm Platform Data Portal. A full explanation and the R code used to process the data is published as an RPubs document.

Table 1 lists the variable names as they appear in the published means data set, the corresponding display names used in this report, and variable units. The data set includes 2 derived variables that are not available from the data portal. These are the daily mean of total oxidisable N (ToTN_mg_l), calculated as the sum of Nitrite_and_Nitrate_mg_l, Ammonium_mg_l and Ammonia_mg_l, and total daily precipitation (Total_Precipitation_mm) as this is likely to be a more meaningful statistic than the daily mean Precipitation_mm (Table 2).

The summary statistics in this report are for data that have not been adjusted with regards to QC flag or daily missing value threshold.

2 Variable Details

CSV Variable Name	Display Name	Units
Flow_l_s	Flow	L/s
Water_Temperature_Flume_oC	Water_Temperature_Flume	°C
Nitrite_and_Nitrate_mg_l	Nitrite_and_Nitrate	mg/L
Ammonia_mg_l	Ammonia	mg/L
Ammonium_mg_l	Ammonium	mg/L
Conductivity_uS_cm	Conductivity	uS/cm
Dissolved_Oxygen	DO	%
pH	pH	NA
Water_Temperature_Flow_cell_oC	Water_Temperature_Flow_cell	°C
Turbidity_FNU	Turbidity	FNU
Total_Phosphorus_mg_l	Total_Phosphorus	mg/L
Ortho_Phosphorus_mg_l	Ortho_Phosphorus	mg/L
Fluorescent_Dissolved_Organic_Matter_ug_l_QSU	FDOM	ug/L QSU
Precipitation_mm	Precipitation	mm
Soil_Temperature_15cm_Depth_oC	Soil_Temperature	°C
Soil_Moisture_10cm_Depth	Soil_Moisture	%

Table 1: *Variable names, units and missing value thresholds*

Derived Variable Name	Display Name	Units
TotN_mg_l	TotN	mg/L
Total_Precipitation_mm	Total_Precipitation	mm

Table 2: *Derived variable names, units and missing value thresholds*

3 Missing Values

3.1 Total number of missing values

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	84734	63621	66152	98610	66196	70694	58178	74433	54234	54009	67118	63351	65624	65101	67642
Water_Temperature_Flume	192144	179590	180786	211160	175561	187413	174989	178184	171090	170680	180203	179355	179740	180569	185730
Nitrite_and_Nitrate	248463	258827	296818	385114	362018	279065	293416	299893	358844	359331	279249	258816	256945	331703	313617
Ammonia	240381	266337	293939	383047	359515	273334	286340	295654	351270	353531	271940	250877	242155	334009	303358
Ammonium	243236	264611	292441	382943	358691	273336	291242	294900	351036	352719	275573	250184	244250	334032	302605
Conductivity	237444	262592	292798	382195	358401	271872	286738	294473	350864	352952	270763	250755	240662	334155	302640
DO	247936	263774	301633	382241	359770	270551	286222	294791	351253	353793	268038	252312	240392	334809	303349
pH	236116	264376	292429	382792	358243	270551	286224	295212	350860	352665	269258	250492	240391	333929	302623
Water_Temperature_Flow_cell	236002	262521	292424	382191	358235	270698	286222	294418	350796	352627	268038	249953	240388	334136	302596
Turbidity	242839	263129	294155	383694	358278	274121	286845	297809	350982	353730	270575	251641	244965	337874	307077
Total_Phosphorus	410016	329614	410016	410016	410016	410016	359450	410016	410016	410016	352951	375968	410016	410016	410016
Ortho_Phosphorus	410016	356195	410016	410016	410016	410016	380867	410016	410016	410016	379172	375968	410016	410016	410016
FDOM	303429	309060	336363	393274	375656	320225	328565	334536	369850	373393	314385	304421	300324	358928	344078
Precipitation	133367	15173	31735	20571	9311	90925	6086	10725	17488	27763	36456	61523	122002	118762	97083
Soil_Temperature	184228	20352	31521	16494	7500	67212	6063	19946	10035	31042	40116	66965	138050	106734	111222
Soil_Moisture	185393	21099	31944	17037	7789	74946	6390	20166	10443	35375	46319	60512	138036	107838	111918
TotN	248430	258809	296660	385113	362003	279065	293363	299885	358841	359324	277799	258735	256679	331703	313601
Total_Precipitation	133367	15173	31735	20571	9311	90925	6086	10725	17488	27763	36456	61523	122002	118762	97083

* values in red are derived variables

Table 3: *Total number of missing values (out of 410016)*

3.2 Total number of missing values as a percentage of observed values

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	21	16	16	24	16	17	14	18	13	13	16	15	16	16	16
Water_Temperature_Flume	47	44	44	52	43	46	43	43	42	42	44	44	44	44	45
Nitrite_and_Nitrate	61	63	72	94	88	68	72	73	88	88	68	63	63	81	76
Ammonia	59	65	72	93	88	67	70	72	86	86	66	61	59	81	74
Ammonium	59	65	71	93	87	67	71	72	86	86	67	61	60	81	74
Conductivity	58	64	71	93	87	66	70	72	86	86	66	61	59	81	74
DO	60	64	74	93	88	66	70	72	86	86	65	62	59	82	74
pH	58	64	71	93	87	66	70	72	86	86	66	61	59	81	74
Water_Temperature_Flow_cell	58	64	71	93	87	66	70	72	86	86	65	61	59	81	74
Turbidity	59	64	72	94	87	67	70	73	86	86	66	61	60	82	75
Total_Phosphorus	100	80	100	100	100	100	88	100	100	100	86	92	100	100	100
Ortho_Phosphorus	100	87	100	100	100	100	93	100	100	100	92	92	100	100	100
FDOM	74	75	82	96	92	78	80	82	90	91	77	74	73	88	84
Precipitation	33	4	8	5	2	22	1	3	4	7	9	15	30	29	24
Soil_Temperature	45	5	8	4	2	16	1	5	2	8	10	16	34	26	27
Soil_Moisture	45	5	8	4	2	18	2	5	3	9	11	15	34	26	27
TotN	61	63	72	94	88	68	72	73	88	88	68	63	63	81	76
Total_Precipitation	33	4	8	5	2	22	1	3	4	7	9	15	30	29	24

* values in red are derived variables

Table 4: *Total number of missing values as a percentage*

4 Means

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	1.45	0.99	0.45	0.13	0.18	0.80	1.00	0.40	0.18	0.24	0.91	1.05	0.91	0.21	0.32
Water_Temperature_Flume	10.61	10.23	10.75	10.22	10.98	10.65	10.72	10.60	10.60	11.14	10.55	10.68	10.78	10.99	10.65
Nitrite_and_Nitrate	1.71	3.03	2.13	1.85	1.71	2.49	1.47	1.96	2.85	1.60	3.67	3.53	3.35	6.08	4.79
Ammonia	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00
Ammonium	0.38	0.32	0.27	0.47	2.35	0.35	1.28	0.42	0.31	0.35	1.02	0.48	0.41	0.70	0.70
Conductivity	216.76	197.55	177.87	210.73	161.09	207.83	241.46	182.69	219.34	195.38	273.97	303.80	269.53	246.17	257.98
DO	96.42	93.34	93.65	98.18	93.59	89.45	94.69	89.04	97.44	95.26	90.70	92.74	84.18	93.96	91.12
pH	6.82	6.52	6.46	6.17	6.78	6.53	6.51	6.14	6.63	7.00	6.59	6.84	6.48	6.68	6.45
Water_Temperature_Flow_cell	9.51	9.45	9.78	9.49	9.13	9.49	9.18	9.69	9.34	8.92	9.57	9.60	9.61	9.44	9.39
Turbidity	9.19	16.00	10.90	19.58	30.50	16.38	22.27	29.04	26.99	56.67	35.46	27.00	23.31	28.39	42.45
Total_Phosphorus	NaN	0.06	NaN	NaN	NaN	NaN	0.06	NaN	NaN	NaN	0.09	0.09	NaN	NaN	NaN
Ortho_Phosphorus	NaN	0.02	NaN	NaN	NaN	NaN	0.03	NaN	NaN	NaN	0.03	0.02	NaN	NaN	NaN
FDOM	112.81	148.37	107.27	82.27	208.51	119.30	139.44	120.72	121.79	173.18	119.50	164.52	132.78	131.83	84.97
Precipitation	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03
Soil_Temperature	10.54	10.67	10.89	10.85	11.22	10.63	10.26	10.39	10.95	11.06	10.13	10.33	10.16	10.57	10.55
Soil_Moisture	35.07	35.10	34.97	36.64	35.14	33.29	34.41	35.14	33.33	34.80	34.99	33.85	36.30	33.19	34.41
TotN	2.03	3.33	2.38	2.31	4.13	2.83	2.64	2.38	3.18	1.95	4.48	4.00	3.73	6.64	5.33
Total_Precipitation	1.69	2.28	2.27	2.54	2.49	2.02	2.66	2.67	2.20	2.52	2.34	2.30	1.75	1.86	2.07

* values in red are derived variables

Table 5: *Means*

5 Standard Deviations of Means

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	4.00	3.20	1.39	0.84	0.74	2.89	3.48	1.27	0.81	0.97	2.81	3.23	2.14	0.70	0.87
Water_Temperature_Flume	0.28	0.28	0.37	0.53	0.36	0.29	0.25	0.45	0.54	0.49	0.32	0.24	0.42	0.34	0.45
Nitrite_and_Nitrate	0.26	0.69	0.63	0.36	0.43	0.84	0.36	0.61	0.70	0.95	0.95	1.25	1.25	1.67	1.19
Ammonia	0.01	0.00	0.00	0.00	0.00	0.02	0.01	0.08	0.06	0.00	0.18	0.12	0.06	0.01	0.00
Ammonium	0.91	0.23	0.97	0.46	1.13	0.91	1.69	1.03	0.60	0.64	1.63	0.95	0.37	1.58	0.76
Conductivity	25.32	12.36	19.69	32.09	17.80	13.61	77.35	17.40	38.44	14.36	31.22	23.31	23.91	19.74	20.39
DO	0.53	1.19	1.04	0.64	0.73	1.61	0.73	1.29	1.06	1.07	1.62	0.99	2.15	0.97	1.21
pH	0.13	0.10	0.12	0.22	0.14	0.12	0.14	0.14	0.19	0.12	0.16	0.15	0.12	0.13	0.10
Water_Temperature_Flow_cell	0.30	0.31	0.29	0.31	0.31	0.31	0.34	0.34	0.36	0.38	0.39	0.36	0.34	0.28	0.41
Turbidity	17.08	39.78	16.63	24.51	23.38	26.97	33.72	36.44	40.53	51.43	116.10	92.69	78.57	61.03	81.07
Total_Phosphorus	NA	0.04	NA	NA	NA	NA	0.05	NA	NA	NA	0.16	0.21	NA	NA	NA
Ortho_Phosphorus	NA	0.01	NA	NA	NA	NA	0.02	NA	NA	NA	0.07	0.04	NA	NA	NA
FDOM	14.90	17.54	17.05	10.59	12.62	19.16	15.40	10.37	12.58	14.71	18.88	23.34	16.06	14.87	12.08
Precipitation	0.12	0.11	0.11	0.12	0.11	0.11	0.11	0.12	0.11	0.12	0.11	0.11	0.11	0.11	0.11
Soil_Temperature	0.13	0.18	0.19	0.16	0.19	0.18	0.17	0.16	0.21	0.22	0.17	0.34	0.27	0.23	0.27
Soil_Moisture	0.30	0.27	0.31	0.28	0.31	0.29	0.26	0.30	0.26	0.34	0.43	0.38	0.39	0.34	0.42
TotN	0.91	0.73	1.39	0.60	1.45	1.27	3.55	1.26	0.90	1.14	1.31	1.56	1.35	2.41	2.31
Total_Precipitation	0.12	0.11	0.11	0.12	0.11	0.11	0.11	0.12	0.11	0.12	0.11	0.11	0.11	0.11	0.11

* values in red are derived variables

Table 6: *Standard Deviations of Means*

6 Medians

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	0.28	0.14	0.05	0.00	0.01	0.07	0.06	0.08	0.02	0.00	0.10	0.16	0.22	0.02	0.06
Water_Temperature_Flume	10.10	9.70	10.27	9.82	10.40	10.00	10.30	10.17	10.00	10.60	10.05	10.10	10.10	10.15	9.90
Nitrite_and_Nitrate	1.37	2.80	2.16	1.42	1.26	1.86	1.06	1.53	2.37	1.01	2.14	2.24	2.03	4.60	3.79
Ammonia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ammonium	0.14	0.15	0.06	0.23	0.18	0.15	0.28	0.20	0.16	0.16	0.30	0.30	0.20	0.18	0.22
Conductivity	198.00	194.30	174.50	166.72	153.00	202.55	190.90	160.00	203.00	181.60	257.50	286.40	248.80	228.30	259.60
DO	96.59	93.70	93.40	98.60	93.39	88.80	95.32	88.64	97.41	95.43	91.00	93.20	84.50	93.74	91.19
pH	6.89	6.52	6.48	6.71	6.92	6.49	6.69	6.26	6.92	7.22	6.57	6.90	6.55	6.68	6.42
Water_Temperature_Flow_cell	8.77	8.96	9.27	8.86	8.37	8.89	8.70	9.11	8.55	8.38	8.92	8.98	8.98	8.71	8.67
Turbidity	3.50	5.85	3.87	11.45	19.95	5.32	10.07	13.07	8.40	29.57	7.82	5.68	5.80	8.51	11.82
Total_Phosphorus	NA	0.04	NA	NA	NA	NA	0.04	NA	NA	NA	0.05	0.04	NA	NA	NA
Ortho_Phosphorus	NA	0.03	NA	NA	NA	NA	0.02	NA	NA	NA	0.02	0.02	NA	NA	NA
FDOM	103.94	140.22	99.41	79.80	197.38	112.18	135.28	114.78	120.09	171.00	127.47	165.14	132.77	137.15	87.12
Precipitation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soil_Temperature	10.23	10.06	10.38	10.50	10.88	9.97	9.75	9.80	10.57	10.59	9.62	9.75	9.62	10.19	9.97
Soil_Moisture	37.68	37.56	37.12	37.40	38.24	35.51	35.90	37.35	35.54	38.36	38.40	37.56	38.63	35.82	36.79
TotN	1.55	3.05	2.26	1.75	1.58	2.13	1.38	1.75	2.72	1.23	2.66	2.67	2.38	4.77	4.12
Total_Precipitation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* values in red are derived variables

Table 7: *Medians*

7 Minimums

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Water_Temperature_Flume	1.8	1.4	0.50	-0.2	1.60	1.30	0.80	0.20	0.0	0.70	0.90	1.40	0.90	1.60	0.1
Nitrite_and_Nitrate	0.0	0.0	0.00	0.0	0.01	0.00	0.01	0.00	0.0	0.00	0.01	0.00	0.00	0.00	0.0
Ammonia	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Ammonium	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Conductivity	10.0	29.3	10.70	29.3	10.00	12.10	10.10	11.60	42.0	10.00	10.00	10.00	10.30	10.10	42.0
DO	13.6	25.2	26.54	69.4	69.66	35.17	39.60	8.10	43.1	36.00	5.80	50.84	45.60	20.10	49.7
pH	2.9	3.9	3.07	3.0	3.63	3.51	2.64	2.80	3.1	4.05	2.80	3.16	3.11	3.77	3.7
Water_Temperature_Flow_cell	0.0	0.0	0.00	0.0	0.00	0.00	0.57	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Turbidity	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Total_Phosphorus	NA	0.0	NA	NA	NA	NA	0.00	NA	NA	NA	0.00	0.00	NA	NA	NA
Ortho_Phosphorus	NA	0.0	NA	NA	NA	NA	0.00	NA	NA	NA	0.00	0.00	NA	NA	NA
FDOM	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Precipitation	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0
Soil_Temperature	1.6	1.4	1.56	1.4	1.88	0.50	0.62	1.25	1.1	1.06	1.00	0.69	0.88	1.25	0.0
Soil_Moisture	17.1	8.5	12.94	15.6	9.26	6.75	17.20	16.12	10.3	12.35	10.39	4.98	12.62	6.92	14.6
TotN	0.0	0.0	0.01	0.0	0.07	0.01	0.00	0.01	0.0	0.01	0.00	0.01	0.00	0.08	0.0
Total_Precipitation	0.0	0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0

* values in red are derived variables

Table 8: *Minimums*

8 Maximums

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	234.4	164.76	98.93	67.68	61.11	153.2	179.30	70	97.2	139.34	168.1	180	106.1	54.31	69.78
Water_Temperature_Flume	19.5	19.00	22.39	21.30	22.60	22.5	19.00	22	23.7	23.90	22.7	20	22.2	22.60	21.80
Nitrite_and_Nitrate	13.5	33.49	48.86	33.05	25.57	39.5	25.42	42	35.5	33.50	47.1	46	45.3	48.48	47.33
Ammonia	1.2	1.13	0.09	0.64	0.22	2.0	1.72	15	15.2	0.93	19.9	20	13.7	0.64	0.28
Ammonium	109.5	34.01	151.68	27.14	91.26	95.0	199.94	90	134.1	40.85	198.7	197	47.8	97.23	95.32
Conductivity	1974.0	940.00	1656.00	1592.00	1519.00	1001.0	2823.00	1742	1608.0	953.00	2394.0	1806	1668.0	1028.00	1033.00
DO	105.7	103.60	106.55	107.87	109.12	108.5	109.91	105	119.7	117.52	113.5	111	113.3	109.38	105.44
pH	8.0	7.72	8.72	7.83	8.15	10.6	9.81	14	8.5	9.05	8.9	14	8.7	9.71	9.24
Water_Temperature_Flow_cell	26.5	27.46	24.75	24.42	20.99	22.6	24.06	20	24.3	20.59	22.3	25	25.7	24.84	19.84
Turbidity	980.5	4226.72	894.38	1180.50	991.30	1443.1	2169.92	1000	991.1	2445.04	4931.3	4861	4852.1	3504.98	4931.88
Total_Phosphorus	NA	1.80	NA	NA	NA	NA	2.59	NA	NA	NA	5.0	5	NA	NA	NA
Ortho_Phosphorus	NA	0.81	NA	NA	NA	NA	0.64	NA	NA	NA	2.0	2	NA	NA	NA
FDOM	393.3	493.24	419.58	223.54	413.27	499.5	448.65	475	260.1	435.94	336.6	395	382.0	299.96	495.72
Precipitation	17.2	12.80	11.00	10.00	15.60	8.2	10.40	11	9.2	16.60	17.4	10	9.0	9.00	7.00
Soil_Temperature	20.0	21.00	25.62	21.31	21.80	21.9	20.88	21	23.4	22.25	21.3	26	20.2	23.69	24.00
Soil_Moisture	43.0	40.87	40.84	55.91	43.28	54.4	40.61	42	40.8	48.46	46.3	44	44.0	41.24	56.45
TotN	114.1	37.70	127.53	33.26	95.75	114.3	200.96	94	136.2	61.47	78.2	199	56.4	109.11	96.84
Total_Precipitation	17.2	12.80	11.00	10.00	15.60	8.2	10.40	11	9.2	16.60	17.4	10	9.0	9.00	7.00

* values in red are derived variables

Table 9: *Maximums*

9 Coefficients of Variation

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	1.76	1.77	1.79	1.37	1.47	1.60	1.46	1.87	1.56	1.30	1.54	1.63	2.02	1.71	1.75
Water_Temperature_Flume	0.78	0.78	0.78	2.46	0.73	0.78	0.81	0.88	0.82	0.74	0.75	0.85	0.85	0.68	0.85
Nitrite_and_Nitrate	1.53	1.38	1.37	0.97	0.72	1.05	1.18	1.22	0.97	1.14	1.16	1.86	1.91	1.66	0.94
Ammonia	1.48	0.82	0.94	0.94	2.18	1.17	1.42	0.98	0.80	0.58	1.25	0.75	1.92	1.19	1.18
Ammonium	1.81	1.33	1.73	1.06	1.07	1.29	1.31	1.34	2.41	1.84	1.55	2.00	2.06	1.31	1.53
Conductivity	1.51	1.25	1.33	0.97	0.87	1.11	1.33	1.11	0.90	0.89	1.47	1.32	1.45	1.09	1.01
DO	0.98	1.12	1.45	1.32	0.90	1.13	1.04	0.91	1.61	1.05	0.90	0.96	1.08	1.18	0.81
pH	2.00	1.15	1.68	1.26	1.78	1.37	1.51	1.15	1.70	1.68	1.20	1.78	1.77	1.63	1.05
Water_Temperature_Flow_cell	1.36	1.38	1.33	1.70	1.03	1.27	1.13	1.30	1.13	0.92	1.19	1.35	1.58	1.26	1.31
Turbidity	0.98	0.97	0.95	0.88	0.82	1.00	0.81	0.88	0.76	0.76	0.95	1.08	1.12	0.88	0.77
Total_Phosphorus	NA	1.12	NA	NA	NA	NA	0.93	NA	NA	NA	1.05	1.06	NA	NA	NA
Ortho_Phosphorus	NA	1.69	NA	NA	NA	NA	0.68	NA	NA	NA	1.50	2.14	NA	NA	NA
FDOM	0.99	0.90	0.83	0.85	1.04	0.88	0.94	0.81	0.77	1.18	1.80	1.40	1.44	1.07	0.83
Precipitation	0.55	0.54	0.55	0.56	0.55	0.56	0.56	0.56	0.53	0.56	0.55	0.56	0.55	0.55	0.56
Soil_Temperature	0.66	0.70	0.78	0.71	0.68	0.81	0.78	0.73	0.74	0.71	0.75	0.86	1.00	0.73	0.80
Soil_Moisture	1.72	1.90	1.81	1.61	1.79	2.80	1.53	1.84	1.82	1.93	2.12	2.15	2.08	1.79	1.91
TotN	1.44	1.33	1.22	0.87	0.69	1.08	1.26	1.17	0.93	1.20	1.43	1.48	1.54	0.98	0.89
Total_Precipitation	0.55	0.54	0.55	0.56	0.55	0.56	0.56	0.56	0.53	0.56	0.55	0.56	0.55	0.55	0.56

* values in red are derived variables

Table 10: *Coefficients of Variation*

10 Inter Quartile Ranges

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
Variables	**4**	**5**	**6**	**12**	**13**	**9**	**8**	**7**	**11**	**14**	**2**	**3**	**1**	**10**	**15**
Flow	0.40	0.18	0.08	0.02	0.04	0.14	0.20	0.09	0.03	0.04	0.38	0.26	0.21	0.04	0.09
Water_Temperature_Flume	0.61	0.70	0.90	1.41	0.90	0.63	0.60	1.03	1.50	0.95	0.80	0.59	1.00	0.90	1.10
Nitrite_and_Nitrate	0.20	0.54	0.42	0.38	0.30	0.51	0.30	0.37	1.01	0.34	0.50	0.59	0.28	1.39	1.61
Ammonia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ammonium	0.06	0.06	0.02	0.07	0.04	0.05	0.13	0.05	0.03	0.04	0.08	0.05	0.04	0.04	0.04
Conductivity	12.25	17.29	15.96	30.46	15.57	21.36	42.01	17.56	38.36	24.31	26.33	28.35	18.81	25.64	39.53
DO	0.70	1.50	0.78	0.44	0.96	2.00	0.94	2.41	0.90	1.31	2.94	1.50	3.21	1.03	2.16
pH	0.07	0.13	0.10	0.24	0.08	0.14	0.15	0.20	0.12	0.07	0.23	0.09	0.08	0.09	0.12
Water_Temperature_Flow_cell	0.25	0.32	0.35	0.29	0.45	0.46	0.67	0.48	0.45	0.73	0.66	0.57	0.30	0.29	0.48
Turbidity	5.33	8.15	5.85	10.37	9.85	8.86	13.76	12.86	9.07	19.49	15.80	12.52	8.08	14.10	28.84
Total_Phosphorus	NA	0.04	NA	NA	NA	NA	0.04	NA	NA	NA	0.03	0.04	NA	NA	NA
Ortho_Phosphorus	NA	0.01	NA	NA	NA	NA	0.01	NA	NA	NA	0.01	0.01	NA	NA	NA
FDOM	24.76	33.04	37.41	15.19	14.33	26.11	26.90	16.30	16.42	23.32	24.10	25.32	12.08	19.98	19.79
Precipitation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Soil_Temperature	0.31	0.42	0.32	0.38	0.45	0.40	0.38	0.38	0.50	0.51	0.40	0.70	0.46	0.51	0.59
Soil_Moisture	0.29	0.25	0.31	0.22	0.27	0.23	0.26	0.26	0.23	0.29	0.28	0.30	0.26	0.30	0.23
TotN	0.20	0.52	0.41	0.44	0.36	0.51	0.34	0.37	1.02	0.36	0.51	0.58	0.31	1.38	1.63
Total_Precipitation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* values in red are derived variables

Table 11: *Interquartile Ranges*

11 Correlations

Catchments are arranged from largest to smallest across the table (left to right) for each farmlet

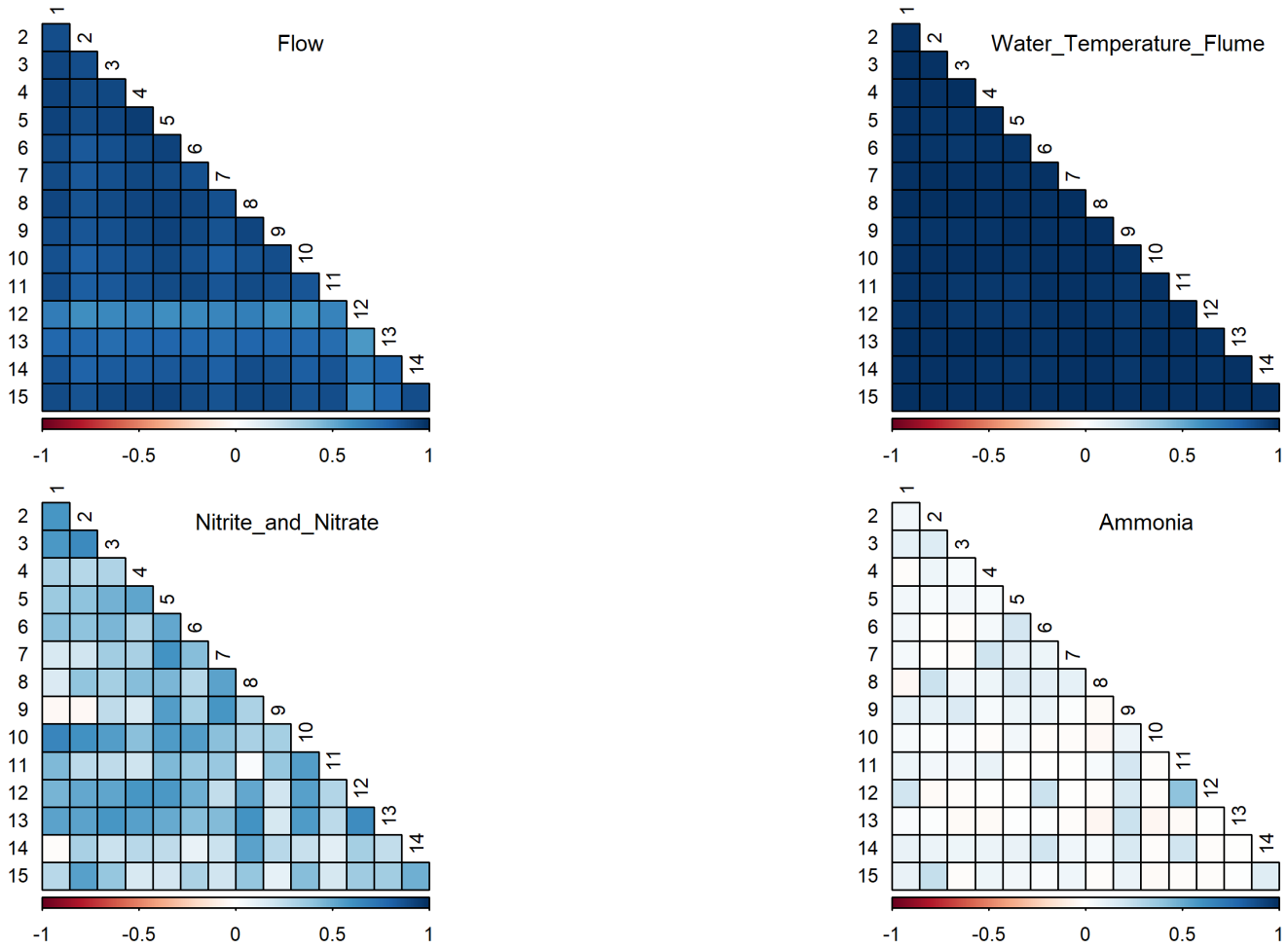

Figure 1: *Correlations between catchments: flow, water temperature flume, nitrite+nitrate, ammonia*

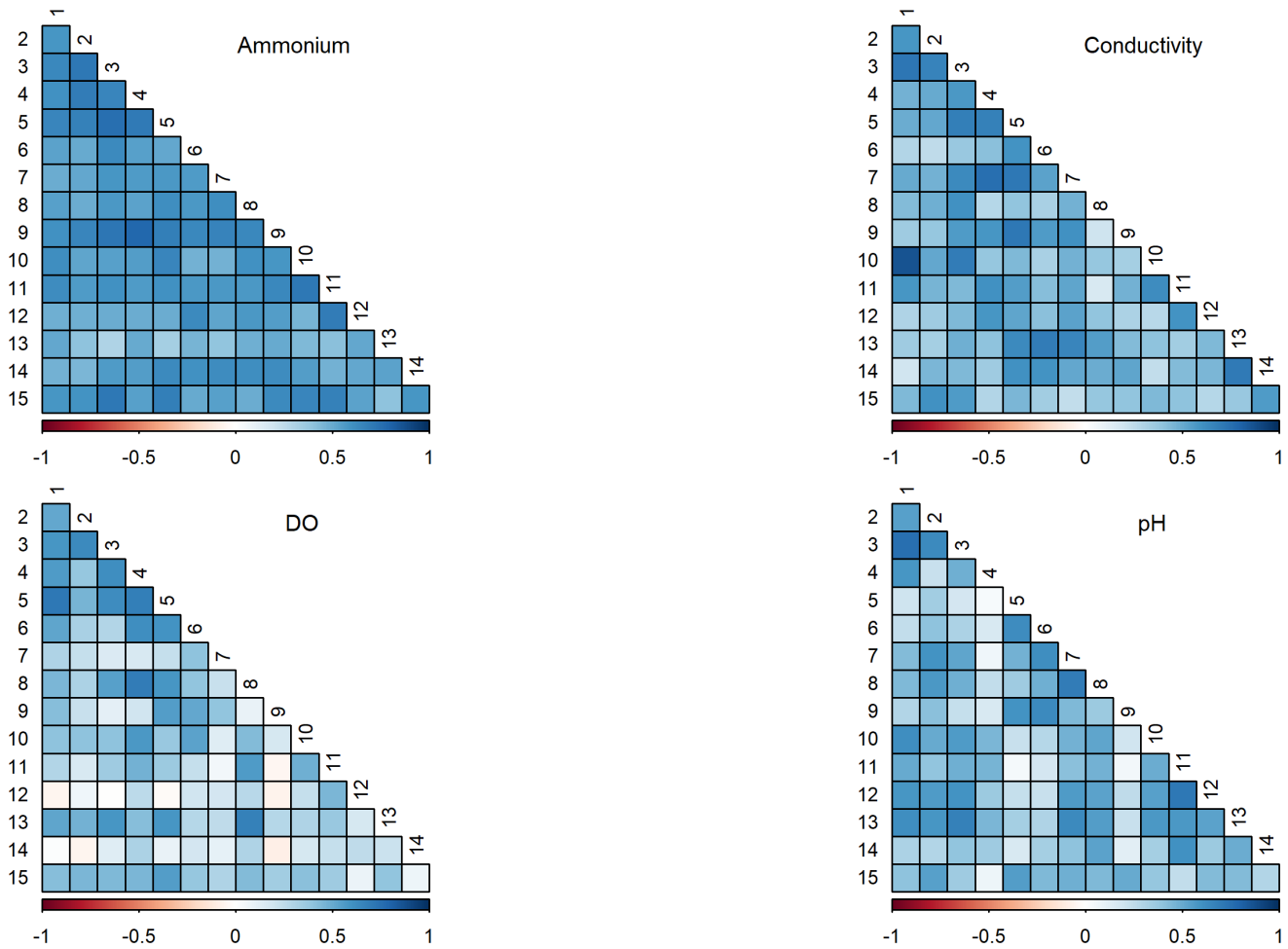

Figure 2: *Correlations between catchments: ammonium, conductivity, dissolved oxygen, ph*

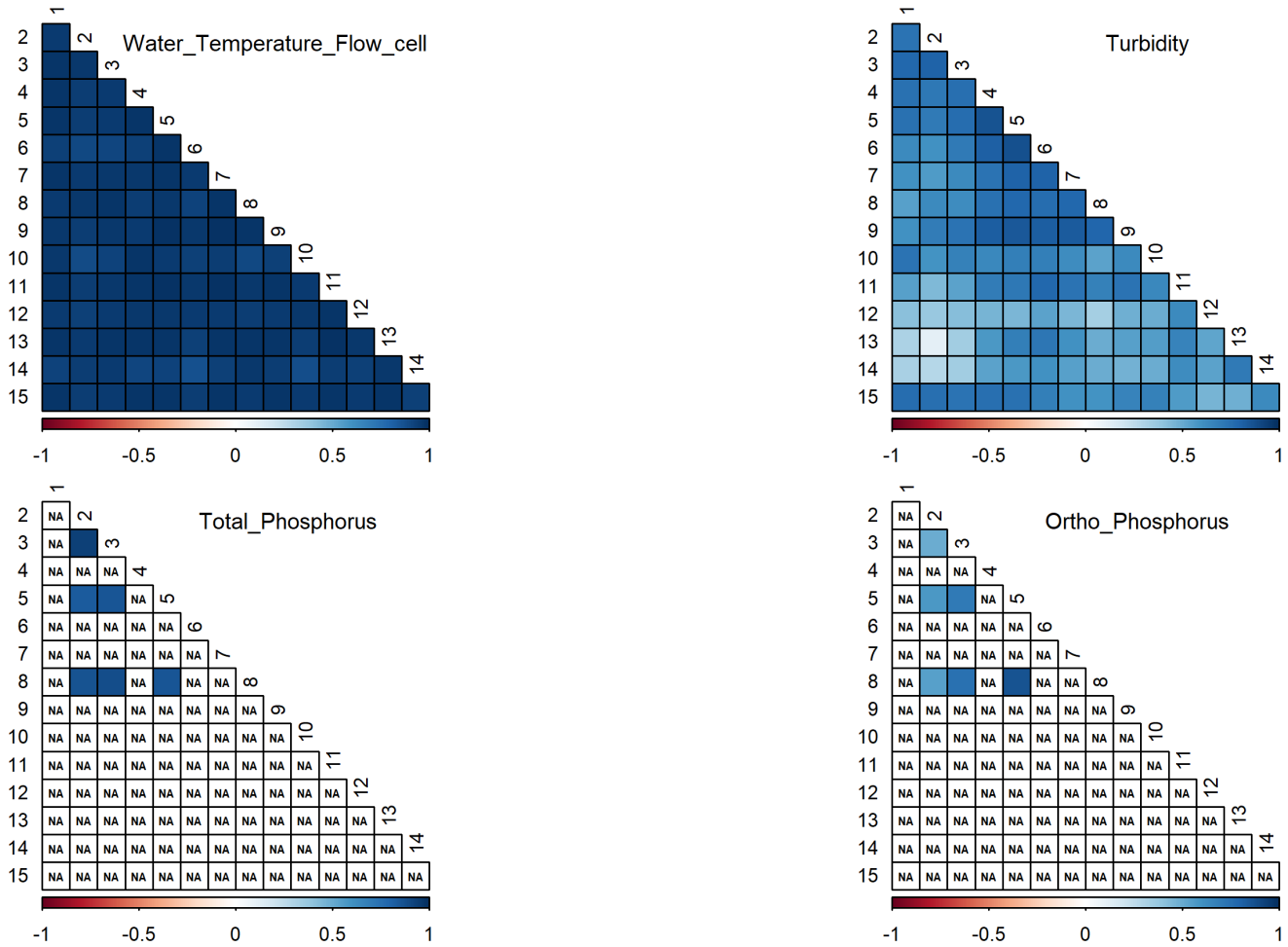

Figure 3: *Correlations between catchments: water temperature flow cell, turbidity, total phosphorus, ortho-phosphorus*

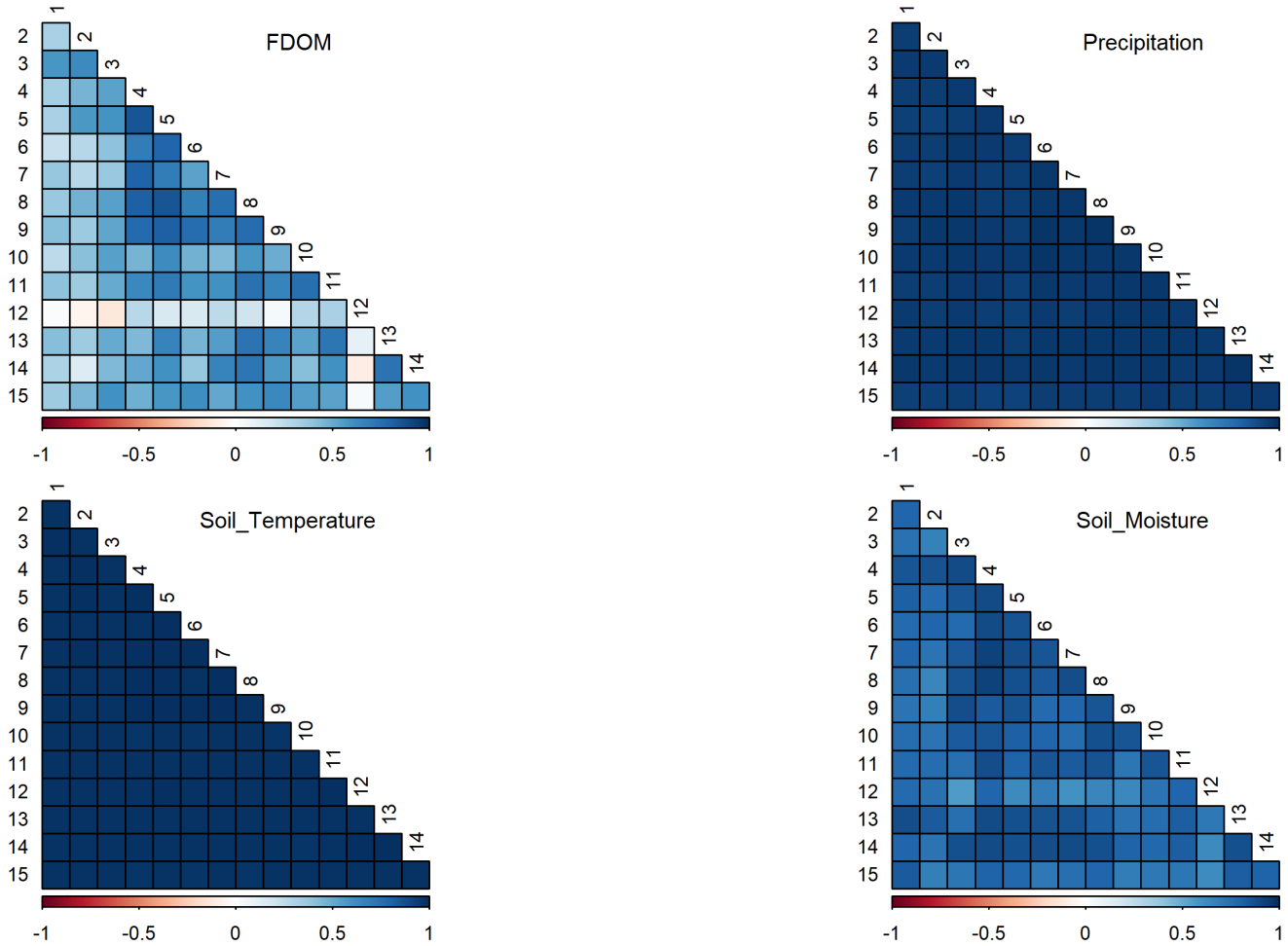

Figure 4: *Correlations between catchments: dissolved organic matter, precipitation, soil temperature, soil moisture*

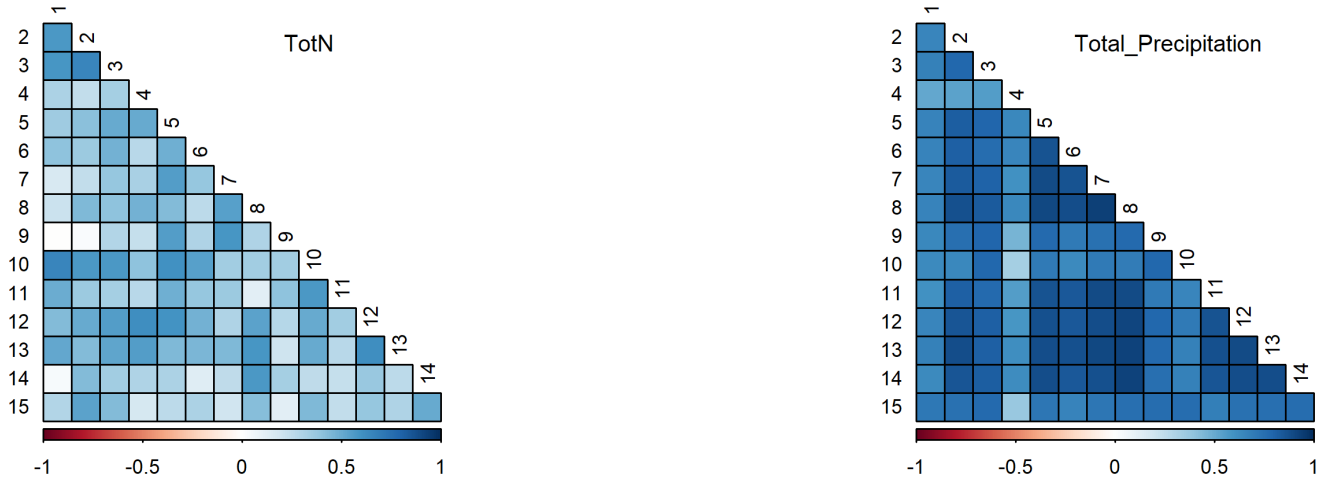

Figure 5: *Correlations between catchments: total oxidisable nitrogen, total precipitation*

12 Chloropleth maps of means

Grey areas represent missing data

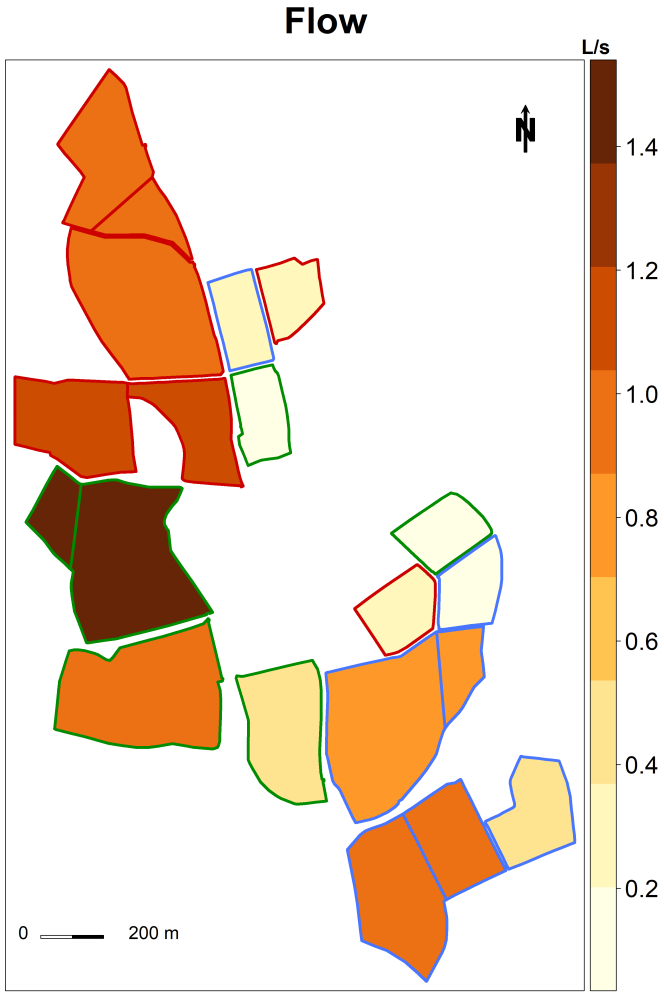

Figure 6: *Mapped means for flow*

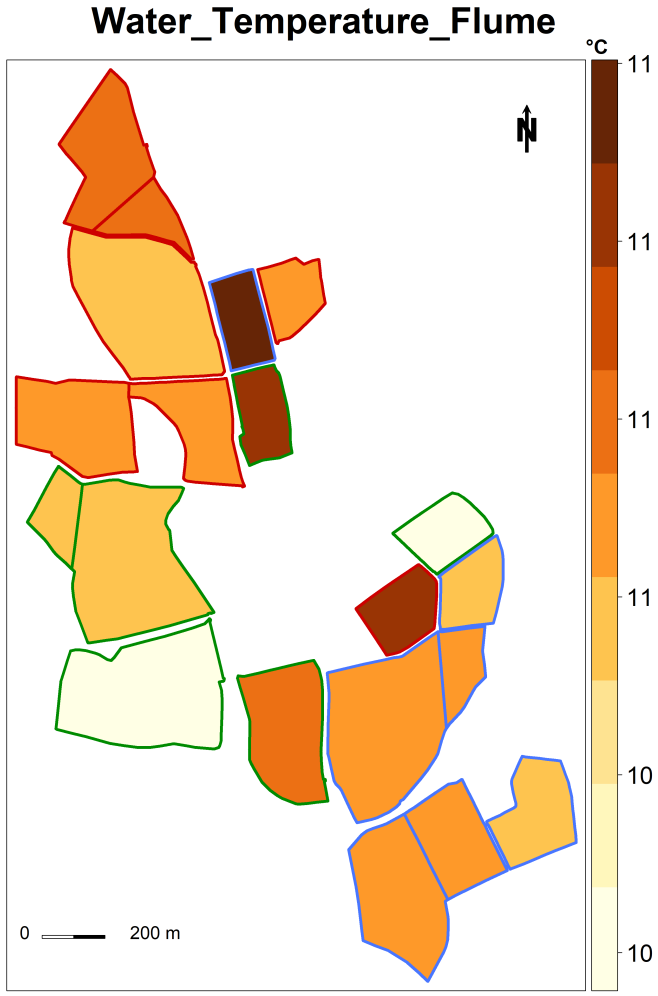

Figure 7: *Mapped means for water temperature flume*

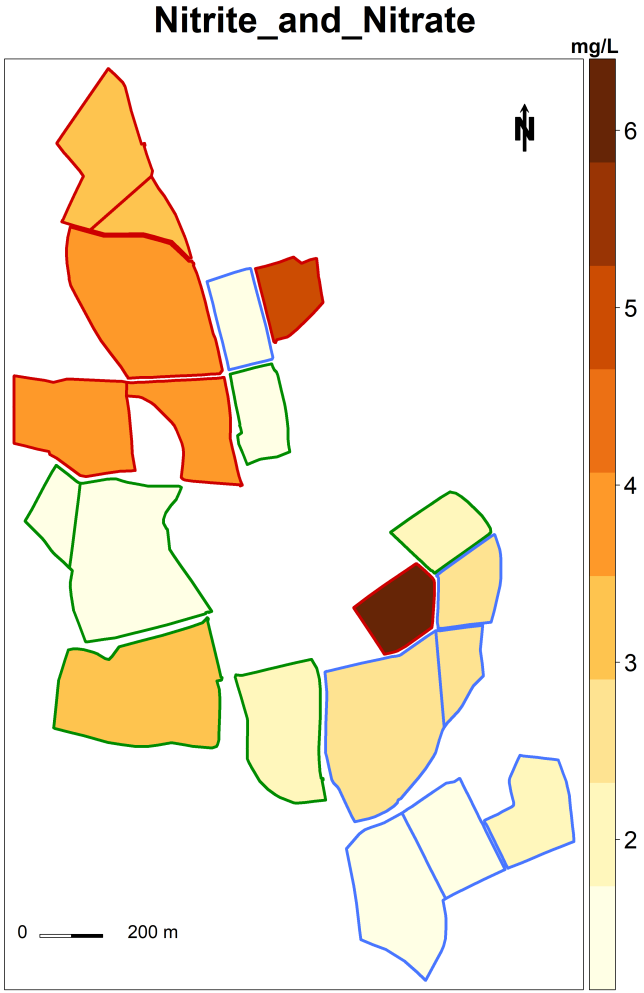

Figure 8: *Mapped means for nitrite+nitrate*

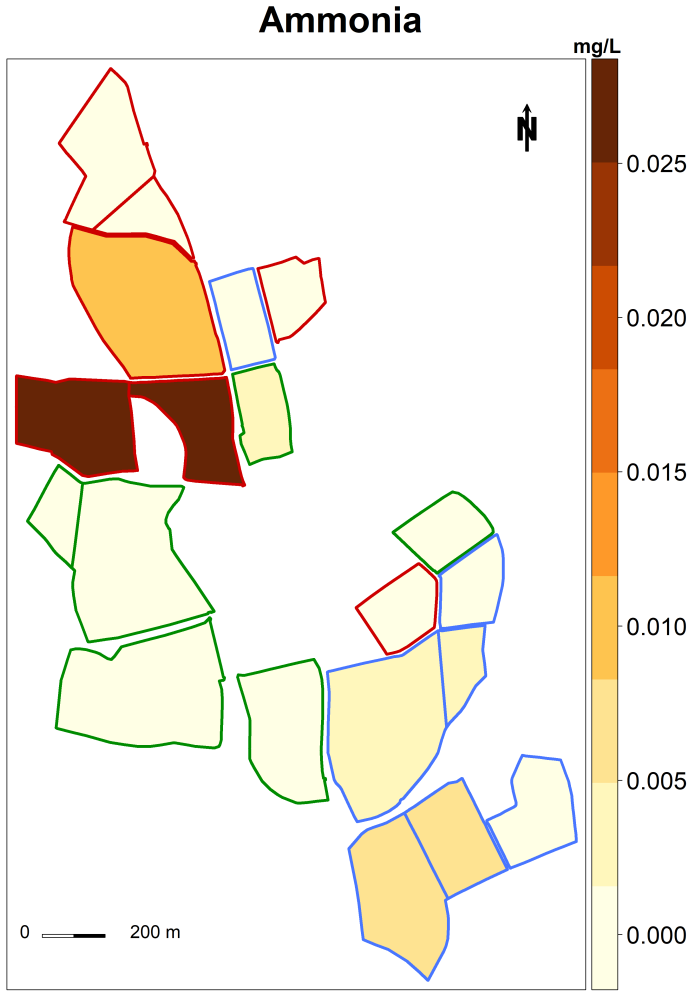

Figure 9: *Mapped means for ammonia*

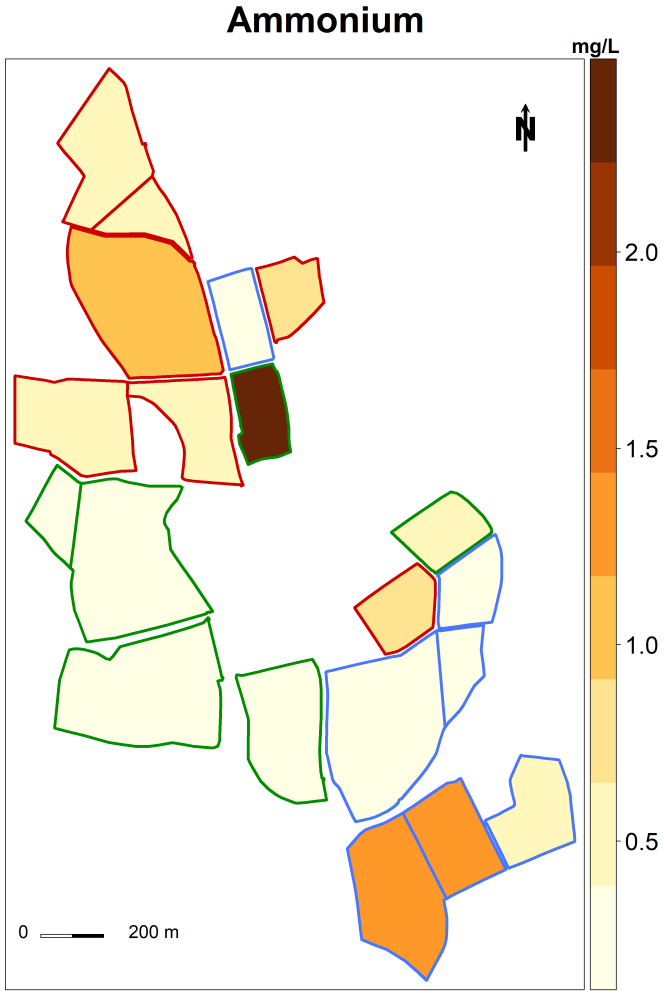

Figure 10: *Mapped means for ammonium*

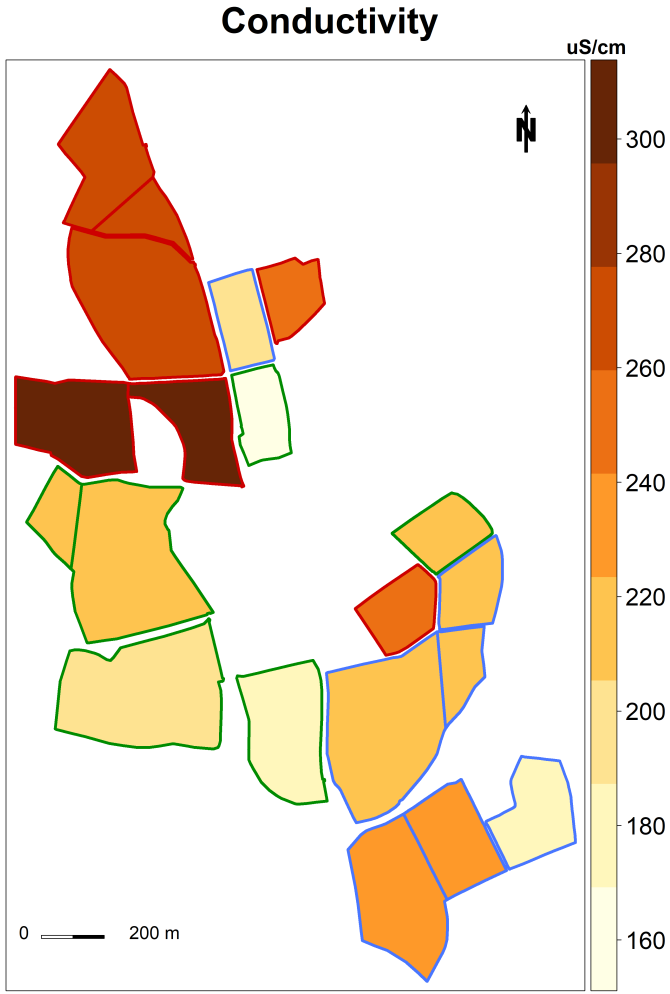

Figure 11: *Mapped means for conductivity*

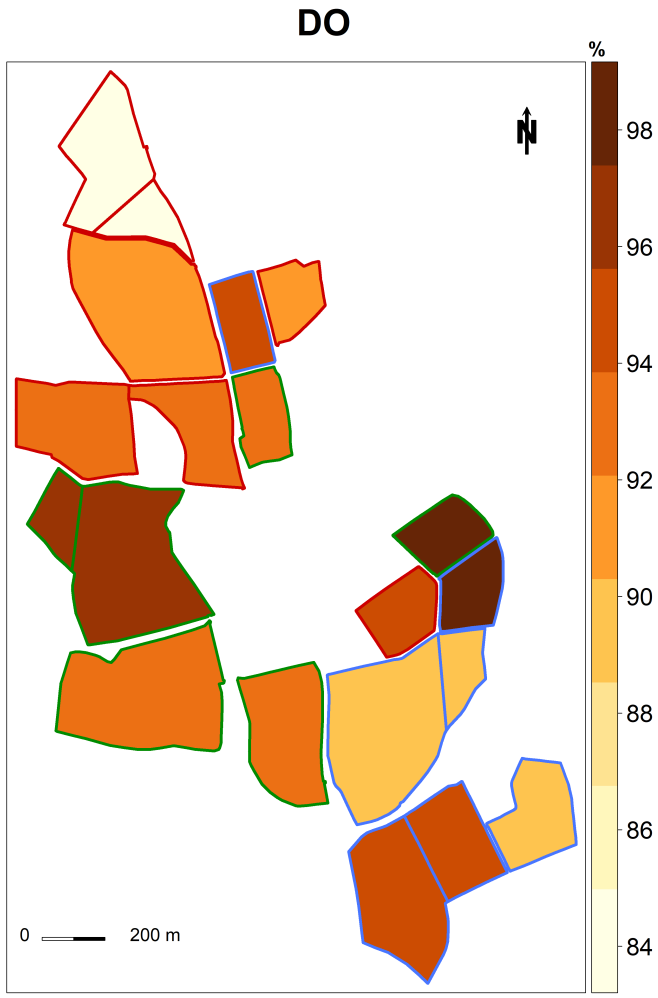

Figure 12: *Mapped means for dissolved oxygen*

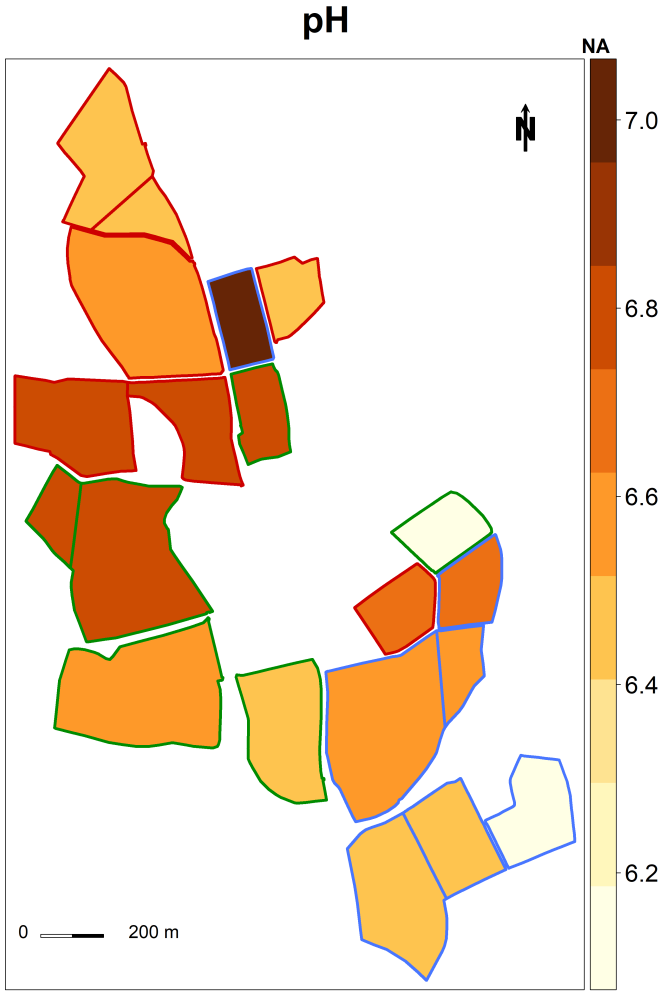

Figure 13: *Mapped means for ph*

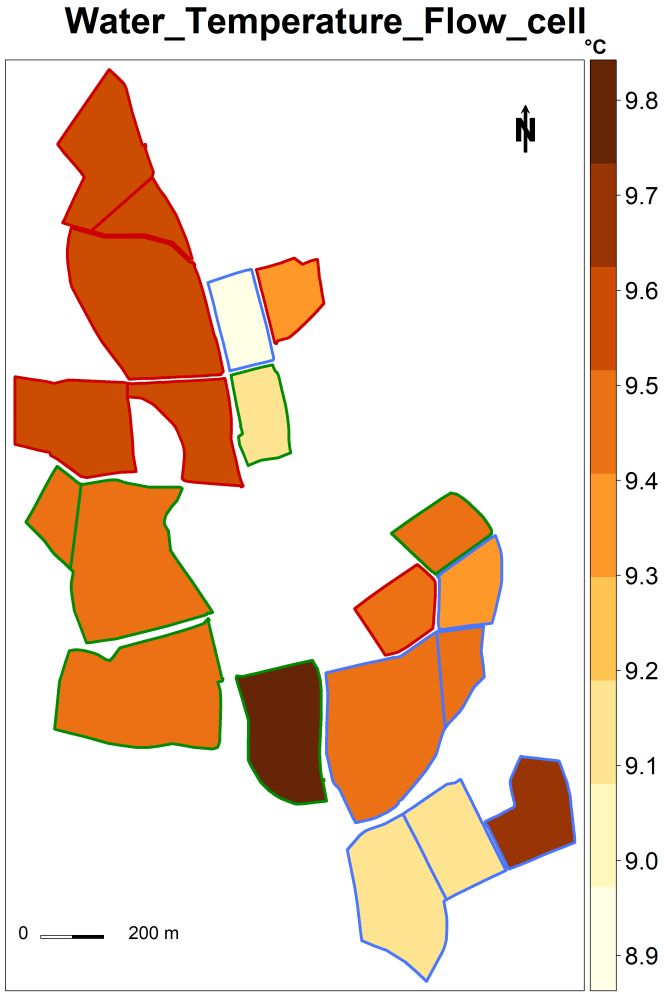

Figure 14: *Mapped means for water temperature flow cell*

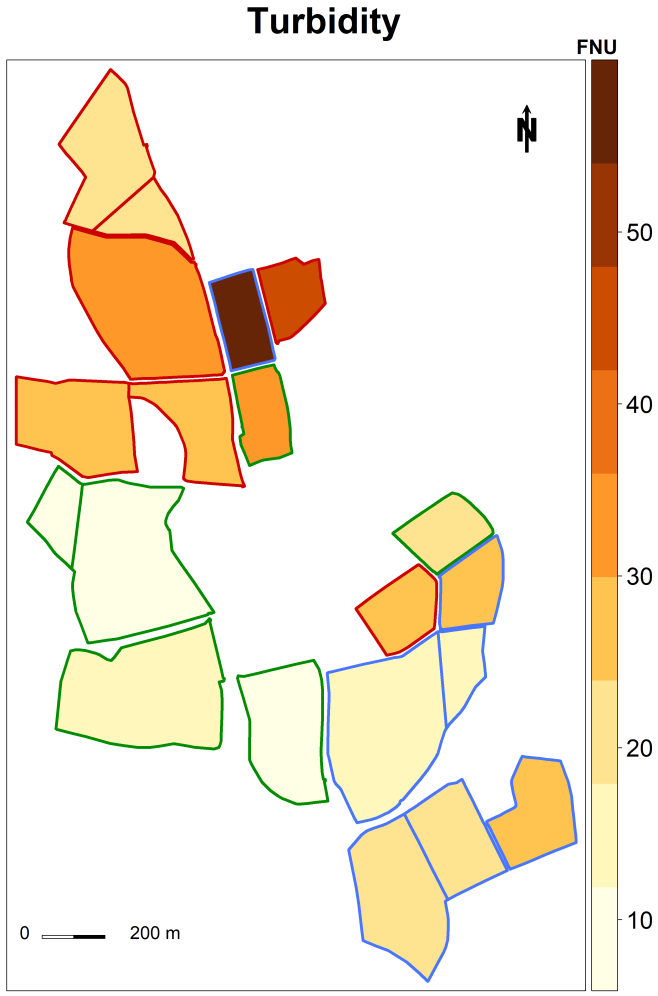

Figure 15: *Mapped means for turbidity*

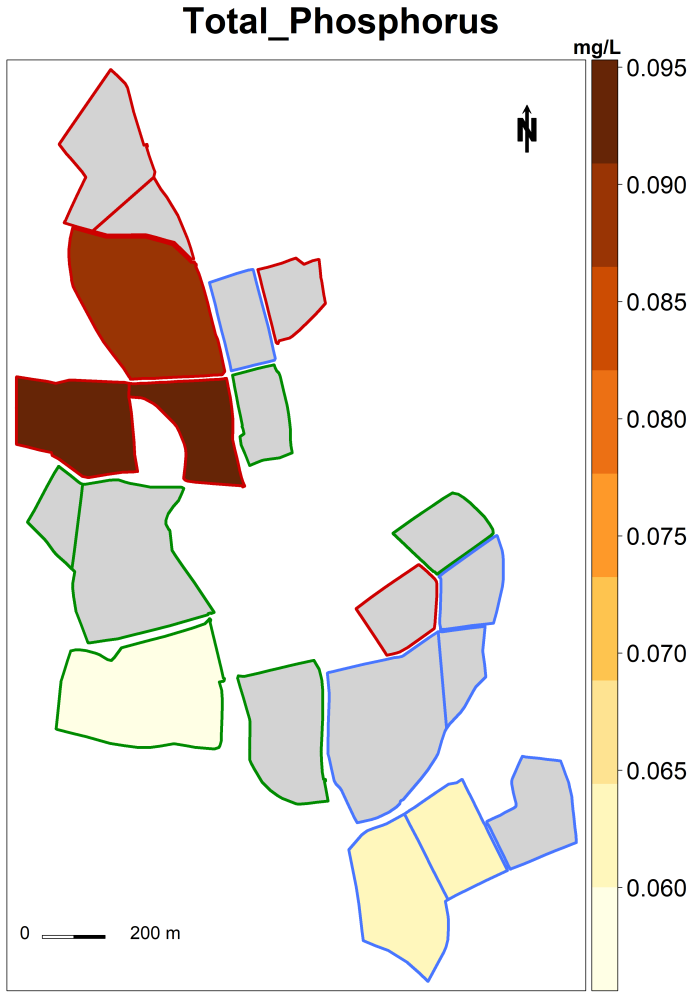

Figure 16: *Mapped means for total phosphorus*

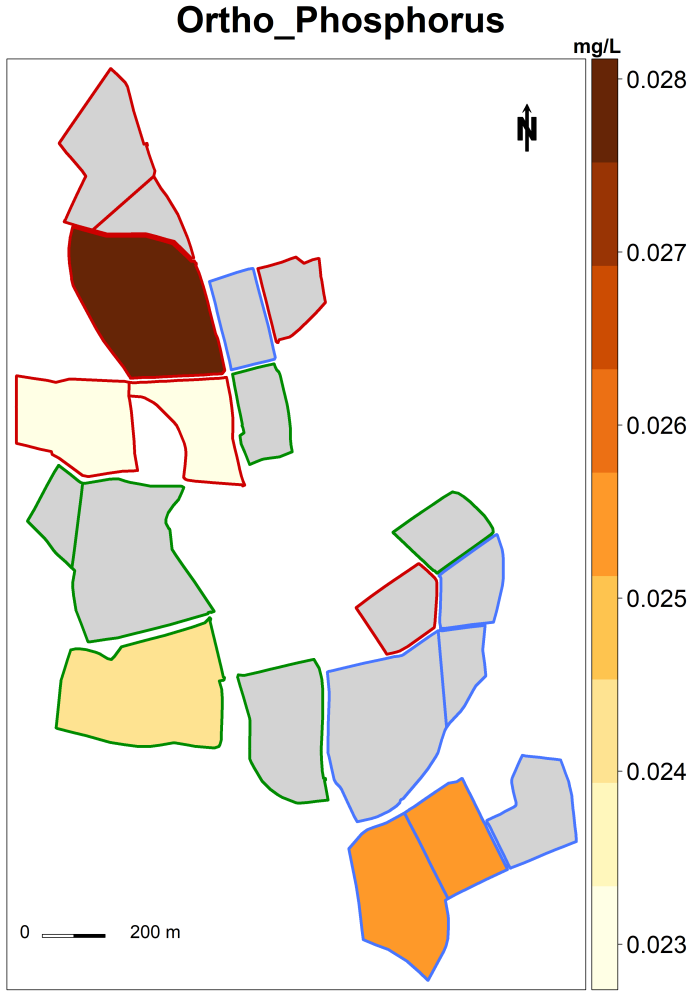

Figure 17: *Mapped means for ortho-phosphorus*

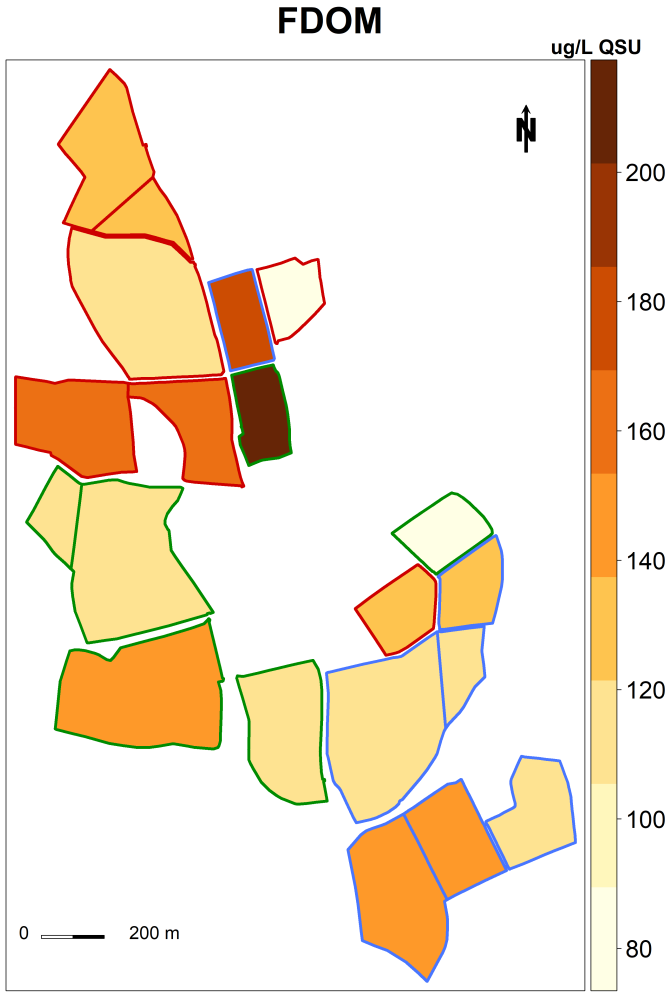

Figure 18: *Mapped means for dissolved organic matter*

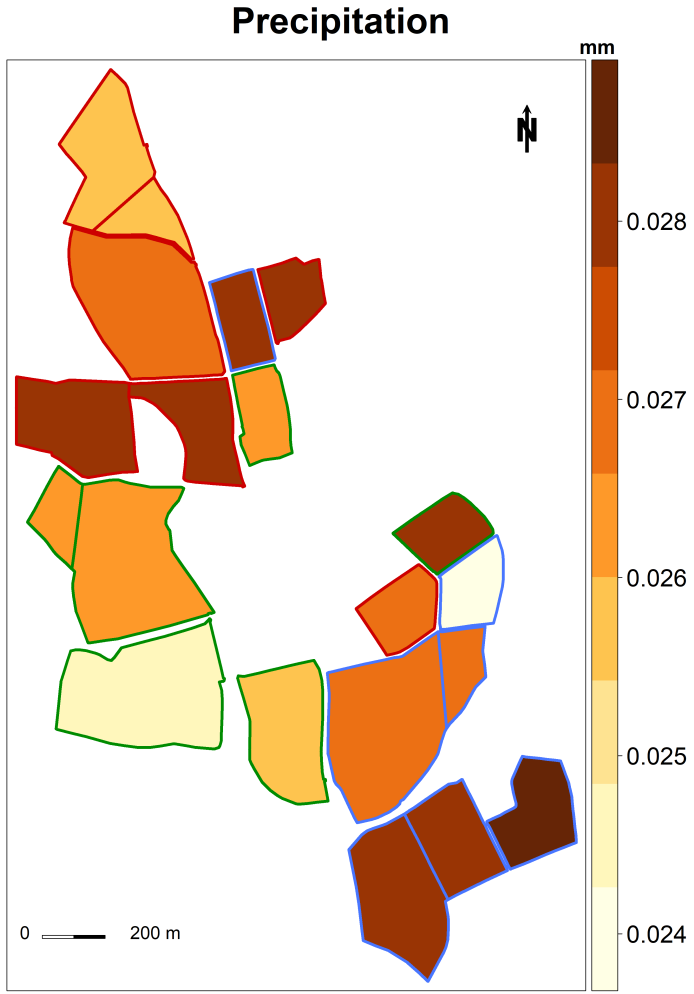

Figure 19: *Mapped means for precipitation*

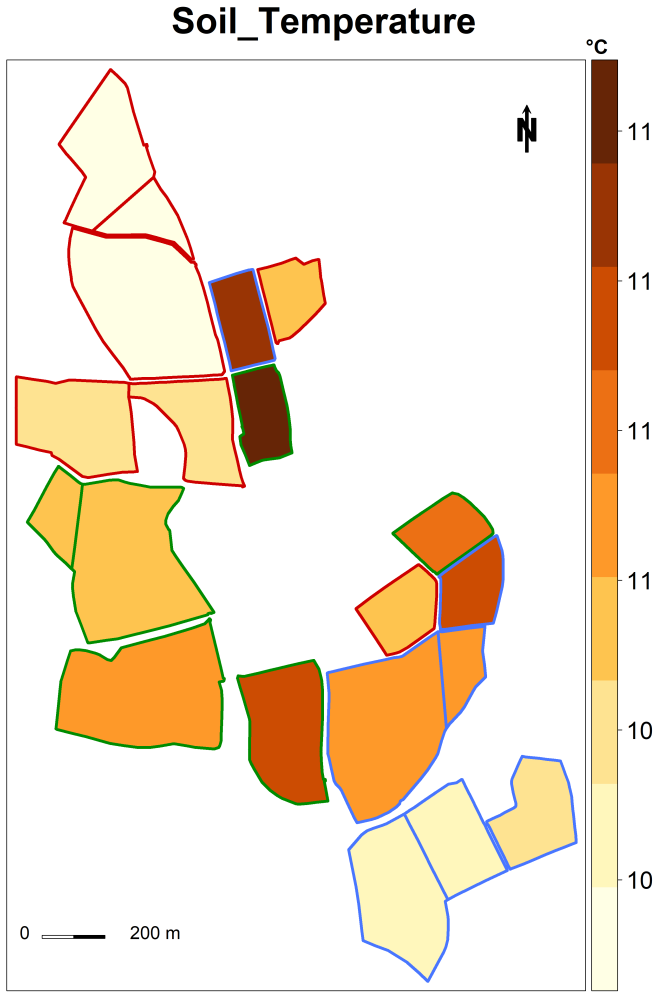

Figure 20: *Mapped means for soil temperature*

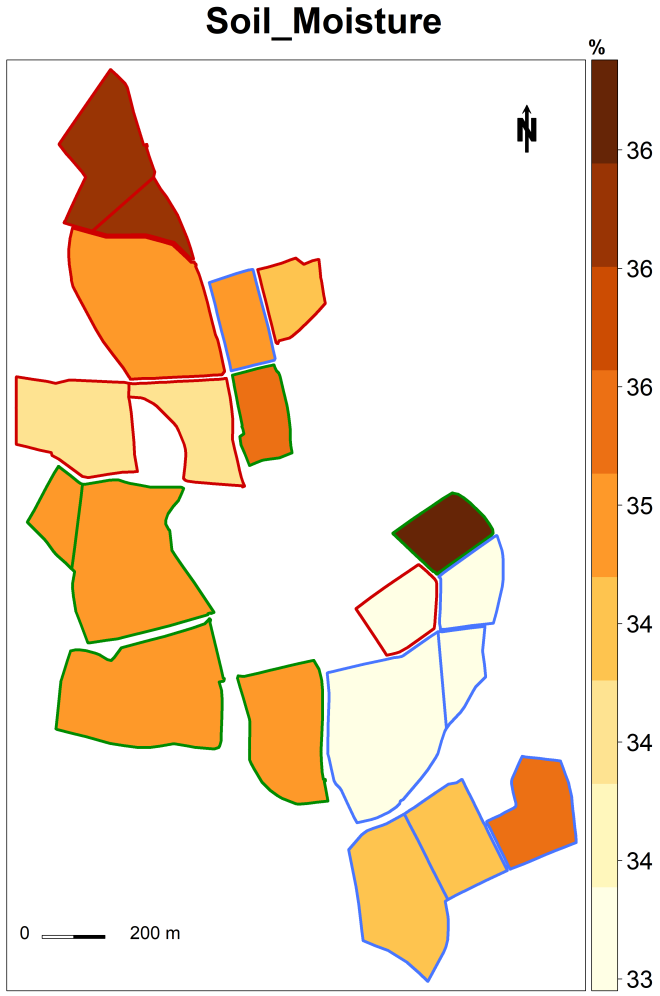

Figure 21: *Mapped means for soil moisture*

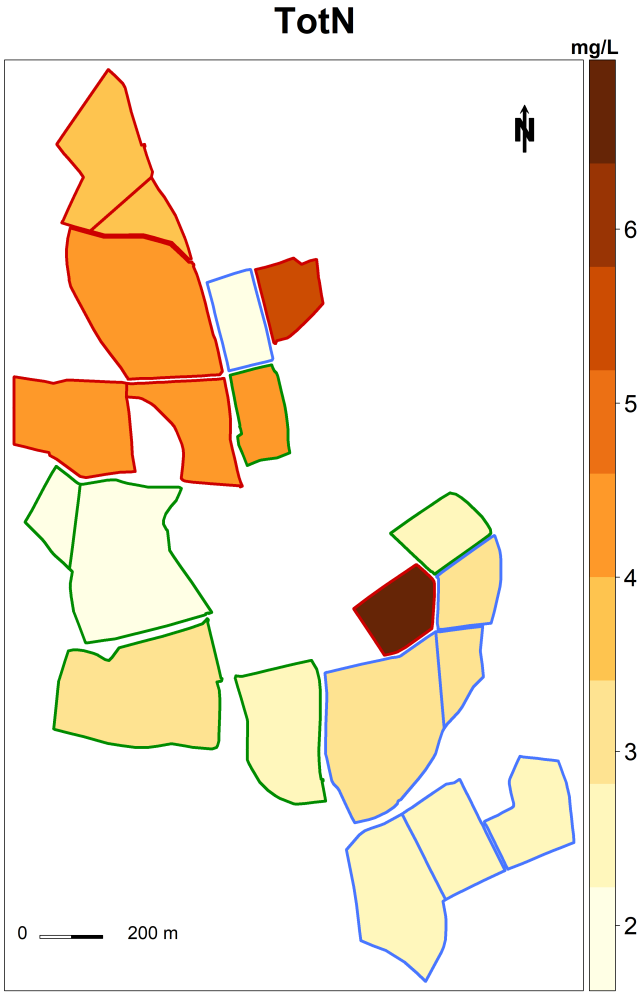

Figure 22: *Mapped means for total oxidisable nitrogen*

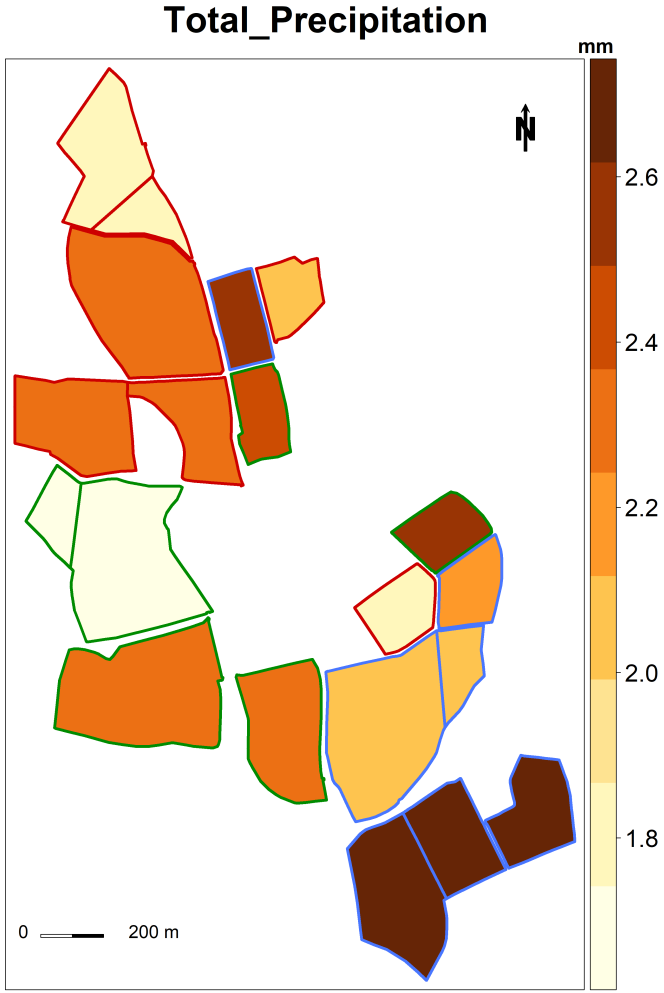

Figure 23: *Mapped means for total precipitation*

13 Appendix

13.1 Hydrological areas - Catchments

	Catchment Number														
	Green Farmlet					Blue Farmlet					Red Farmlet				
	4	5	6	12	13	9	8	7	11	14	2	3	1	10	15
pre-13/08/2013	11.6	6.7	4	1.9	1.8	7.9	7.3	2.7	1.8	1.8	6.8	6.8	5	1.9	1.6
post-13/08/2013	8.1	6.7	4	1.9	1.8	7.9	7.3	2.7	1.8	1.8	6.8	6.8	5	1.9	1.6

Table 12: *Catchment hydrological areas (ha) pre- and post- change to area of Catchment 4 on 13th August 2013*

13.2 Hydrological areas - Farmlets

	Farmlet		
	Green	Blue	Red
pre-13/08/2013	26	22	22
post-13/08/2013	22	22	22

Table 13: *Farmlet hydrological areas (ha) pre- and post- change to area of Catchment 4 on 13th August 2013*