Figure Captions

Figure 1. Location and diagram of field site showing farm-scale hydrological pathways and sampling locations.

Figure 2. Rainfall, hydrograph and sampling times for event on 19th March 2004.

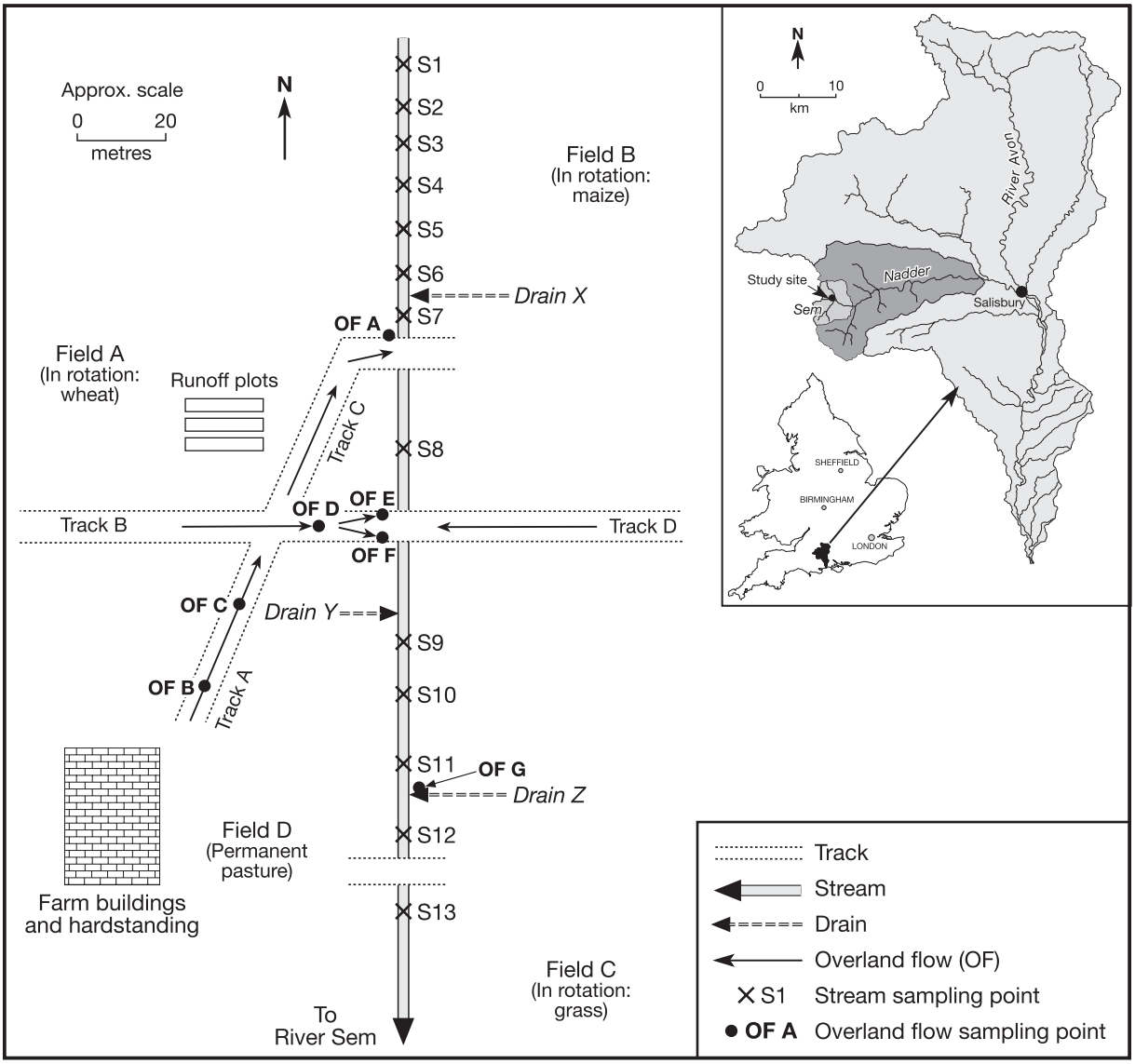
Figure 3. Overland flow concentration data for the event on 19th March 2004, showing mean values, and maximum and minimum values as error bars. See Figure 1 for the sampling locations.

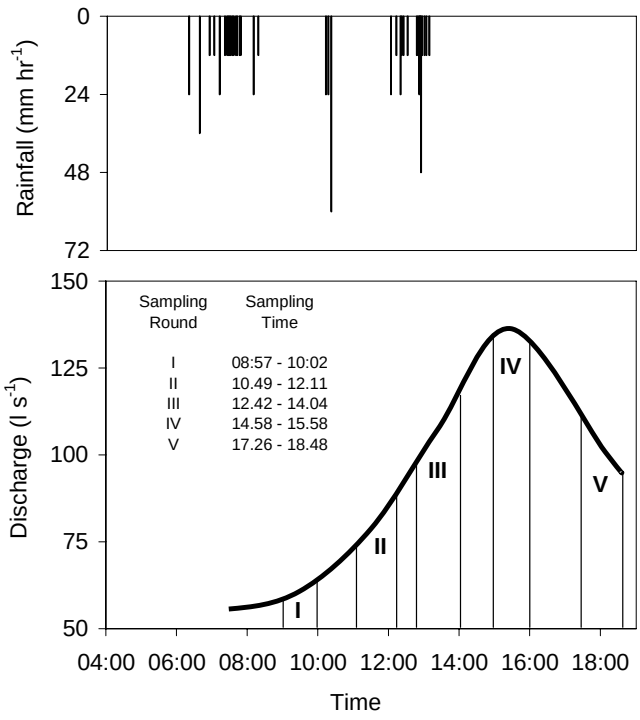
Figure 4. Drainflow concentration data for the event on 19th March 2004. See Figure 1 for the sampling locations and Figure 2 for the sampling times.

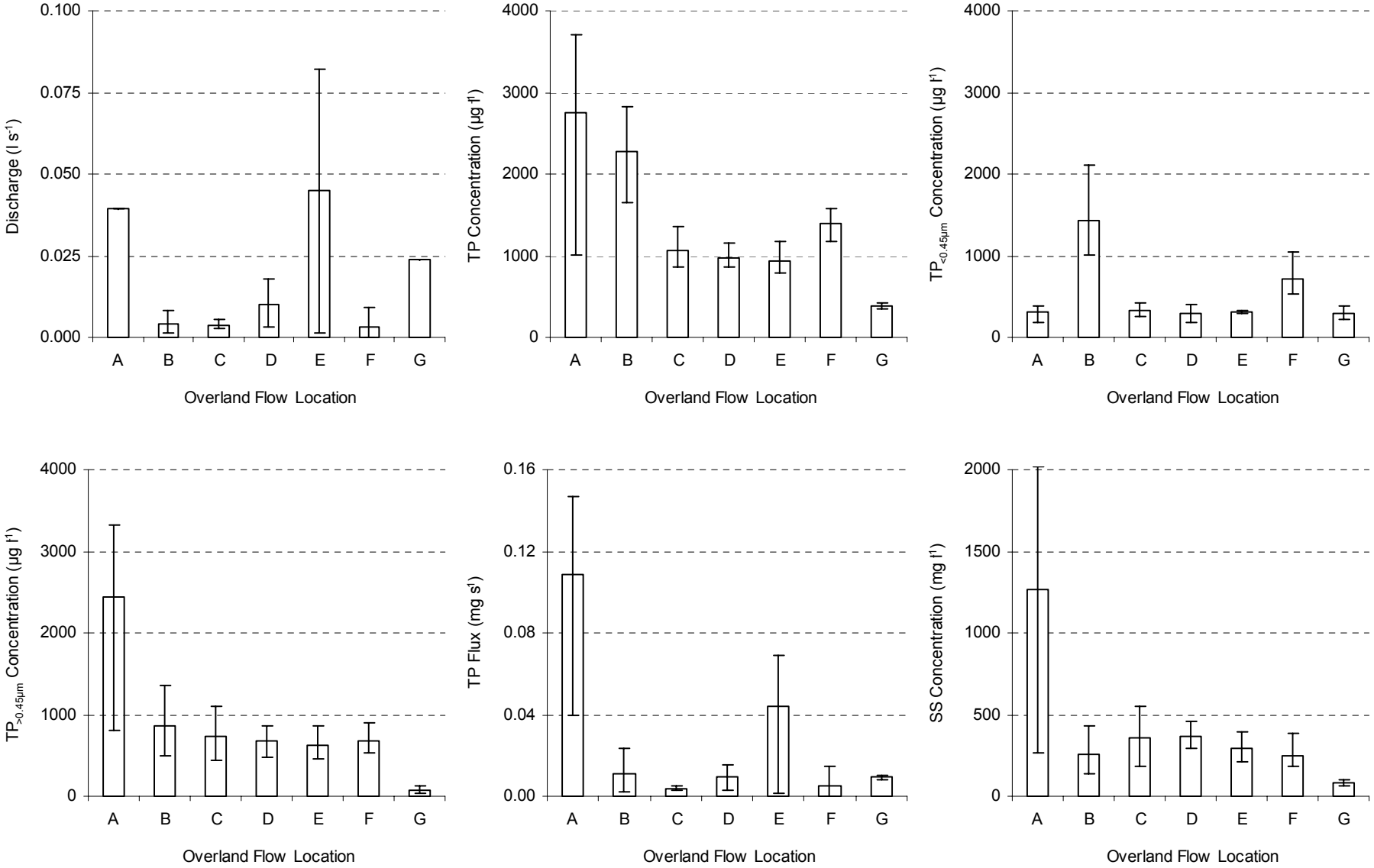
Figure 5. Streamflow concentration data for the event on 19th March 2004. See Figure 1 for the sampling locations and Figure 2 for the sampling times.

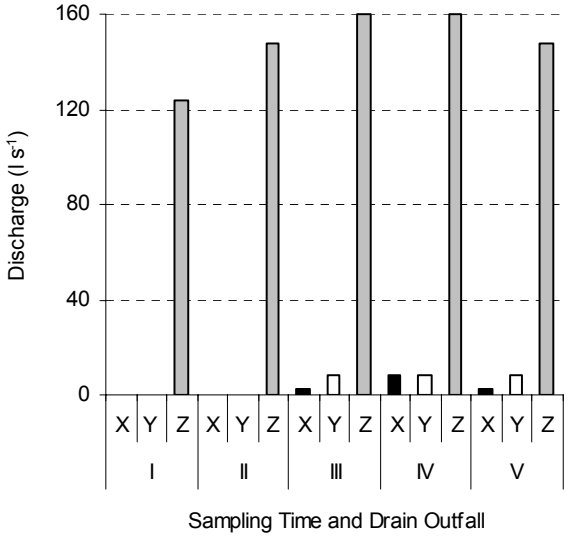
Table 1. Comparison of discharge, phosphorus and suspended sediment flux data for the event on 19th March 2004 for each sampling location and flow type. Values shown are mean data for five sampling points taken over the event ± the standard deviation.

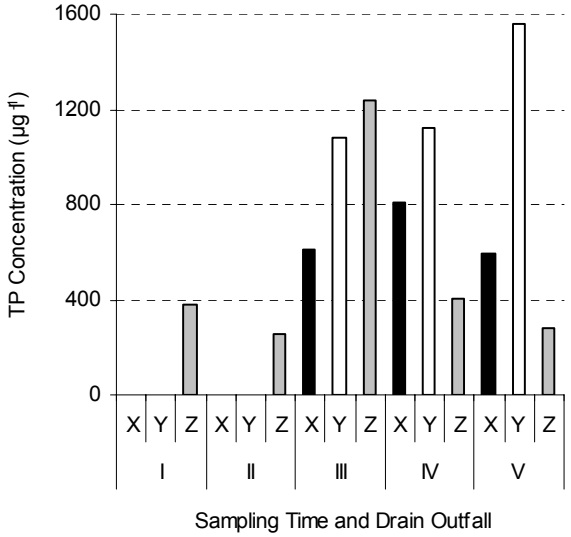
Table 2. Characteristics of sediment collected at overland flow track locations after the event on 19th March 2004.

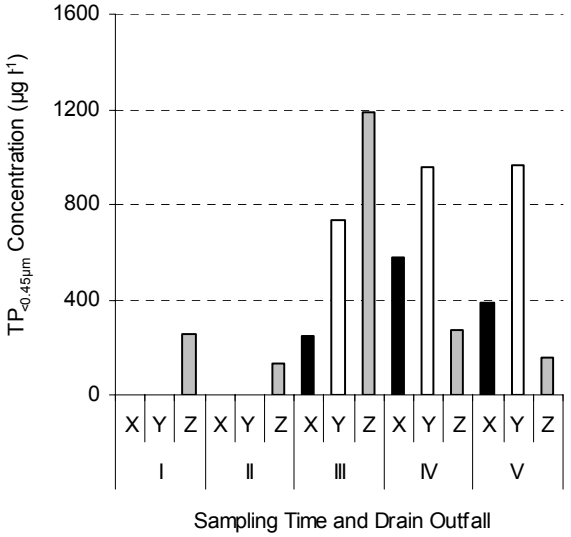

Approx. scale
0 20
metres
N
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
Drain X
Drain Y
Drain Z
OF A
OF B
OF C
OF D
OF E
OF F
OF G
Field A
(In rotation:
wheat)
Runoff plots
Track C
Track A
Track B
Track D
Field B
(In rotation:
maize)
Field C
(In rotation:
grass)
Field D
(Permanent
pasture)
Farm buildings
and hardstanding
To
River Sem
N
0 10
km
River Avon
Study site
Nadder
Sem
Salisbury
SHEFFIELD
BIRMINGHAM
LONDON
Track
Stream
Drain
Overland flow (OF)
S1 Stream sampling point
OF A Overland flow sampling point

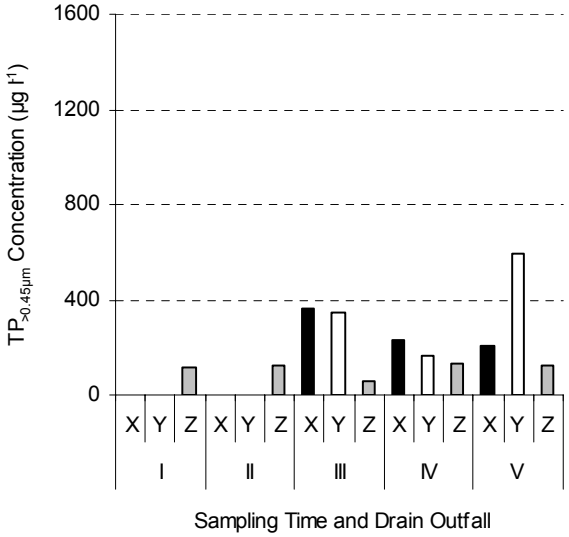

Rainfall (mm hr-1)
0
24
48
72
Discharge (l s-1)
150
125
100
75
50
Sampling Round
Sampling Time
I 08:57 - 10:02
II 10.49 - 12.11
III 12.42 - 14.04
IV 14.58 - 15.58
V 17.26 - 18.48
I
II
III
IV
V
04:00 06:00 08:00 10:00 12:00 14:00 16:00 18:00
Time

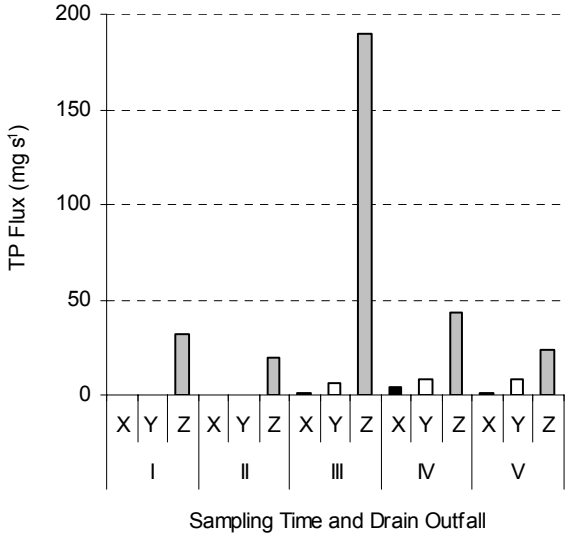

Discharge (l s-1)
0.100
0.075
0.050
0.025
0.000
A B C D E F G
Overland Flow Location
TP Concentration (µg l-1)
4000
3000
2000
1000
0
A B C D E F G
Overland Flow Location
TP<0.45µm Concentration (µg l-1)
4000
3000
2000
1000
0
A B C D E F G
Overland Flow Location
TP>0.45µm Concentration (µg l-1)
4000
3000
2000
1000
0
A B C D E F G
Overland Flow Location
TP Flux (mg s-1)
0.16
0.12
0.08
0.04
0.00
A B C D E F G
Overland Flow Location
SS Concentration (mg l-1)
2000
1500
1000
500
0
A B C D E F G
Overland Flow Location

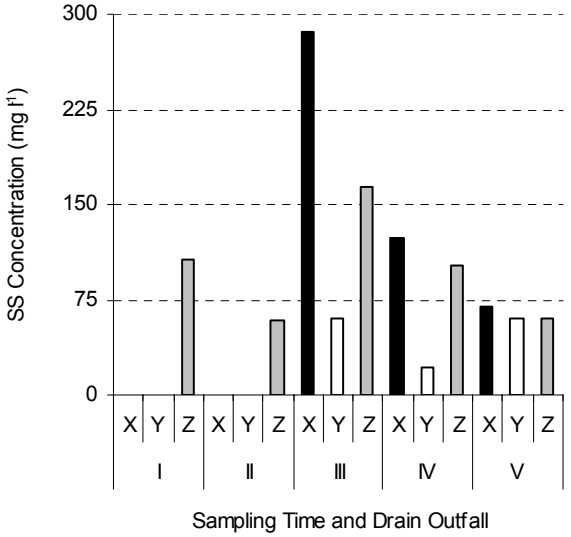

Discharge (l s-1)
160
120
80
40
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

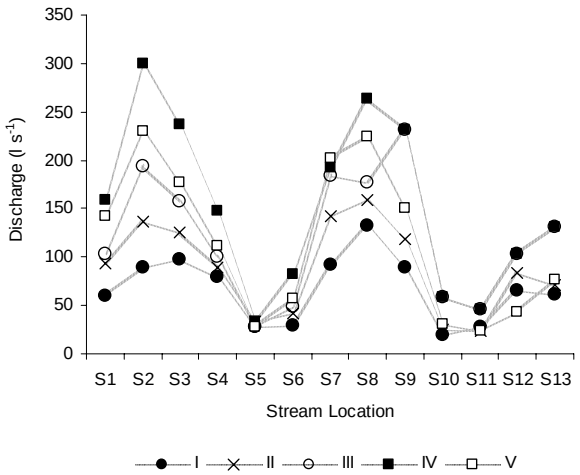

TP Concentration (µg l-1)
1600
1200
800
400
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

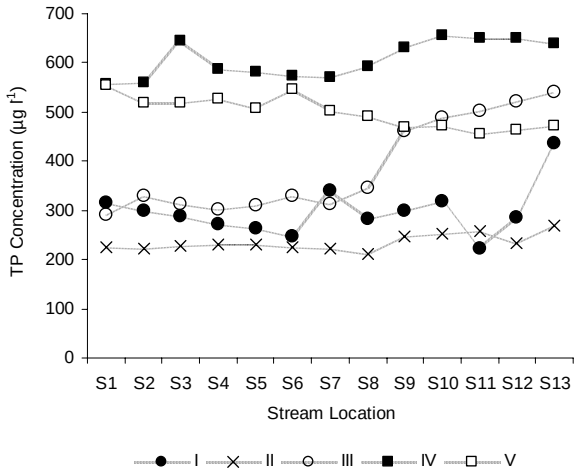

TP<0.45µm Concentration (µg l-1)
1600
1200
800
400
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

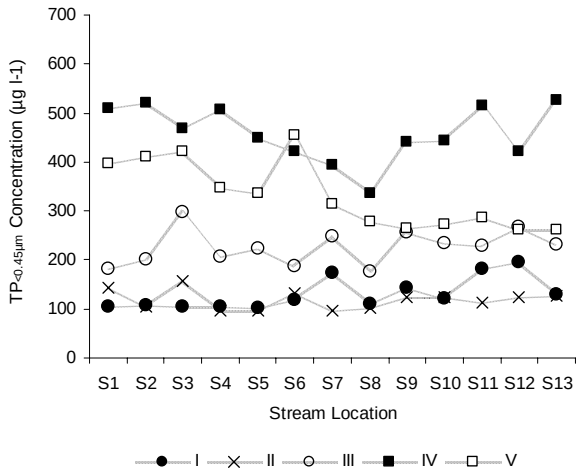

TP>0.45µm Concentration (µg l-1)
1600
1200
800
400
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

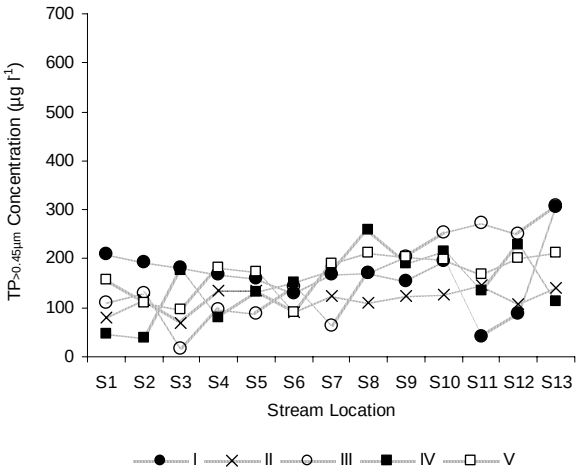

TP Flux (mg s-1)
200
150
100
50
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

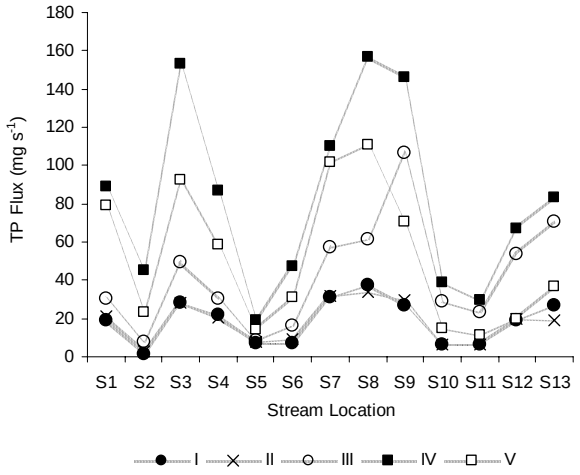

SS Concentration (mg l-1)
300
225
150
75
0
X Y Z X Y Z X Y Z X Y Z X Y Z
I II III IV V
Sampling Time and Drain Outfall

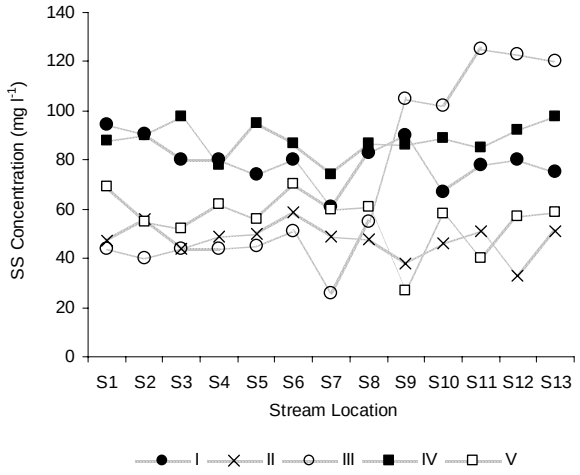

Discharge (l s-1)
350
300
250
200
150
100
50
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V


TP Concentration (µg l-1)
700
600
500
400
300
200
100
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V


TP<0.45µm Concentration (µg l-1)
700
600
500
400
300
200
100
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V


TP>0.45µm Concentration (µg l-1)
700
600
500
400
300
200
100
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V


TP Flux (mg s-1)
180
160
140
120
100
80
60
40
20
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V


SS Concentration (mg l-1)
140
120
100
80
60
40
20
0
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
Stream Location
I II III IV V

Flow Type	Sampling Location	Estimated Discharge ($l\ s^{-1}$)			TP Flux ($mg\ s^{-1}$)			$TP_{<0.45\mu m}$ Flux ($mg\ s^{-1}$)			SS Flux ($g\ s^{-1}$)		
Streamflow	S1	112	±	40	47	±	34	35	±	32	8	±	4
	S2	33	±	30	16	±	18	13	±	18	2	±	3
	S3	159	±	53	70	±	53	53	±	41	11	±	7
	S4	106	±	27	44	±	29	30	±	28	7	±	3
	S5	30	±	3	11	±	5	7	±	5	2	±	1
	S6	52	±	20	22	±	17	16	±	14	4	±	2
	S7	163	±	46	66	±	38	43	±	28	9	±	4
	S8	191	±	53	80	±	53	43	±	32	13	±	6
	S9	164	±	65	76	±	51	46	±	37	12	±	9
	S10	39	±	19	19	±	14	11	±	10	3	±	2
	S11	34	±	11	15	±	11	10	±	8	3	±	2
	S12	80	±	26	36	±	23	21	±	14	7	±	4
	S13	94	±	34	47	±	28	27	±	25	8	±	6
Drainflow	Drain X	4.5	±	3.0	3.7	±	2.4	2.5	±	1.8	0.6	±	0.4
	Drain Y	8.4	±	0.0	10.9	±	1.9	8.7	±	1.1	0.4	±	0.2
	Drain Z	147.8	±	14.9	57.9	±	24.7	31.7	±	10.1	14.6	±	7.2
Overland Flow	OF A	0.040	±	0.000	0.109	±	0.060	0.013	±	0.004	0.050	±	0.036
	OF B	0.004	±	0.004	0.011	±	0.011	0.007	±	0.009	0.001	±	0.001
	OF C	0.004	±	0.002	0.004	±	0.001	0.001	±	0.001	0.001	±	0.000
	OF D	0.010	±	0.007	0.010	±	0.007	0.004	±	0.003	0.004	±	0.003
	OF E	0.045	±	0.041	0.044	±	0.037	0.013	±	0.012	0.015	±	0.013
	OF F	0.003	±	0.005	0.005	±	0.008	0.003	±	0.006	0.001	±	0.001

Overland Flow Type	Overland Flow Location	TP (mg kg^{-1})	Bulk Density (kg m^3)	Water Content (%)	Particle Size (%)			
					Clay	Silt	Sand	Pebbles
					<4 µm	4 µm - 63 µm	63 µm - 2 mm	2 mm - 12 mm
Track	OF A	2223	525	84	24	45	18	13
	OF B	2136	522	72	28	42	20	10
	OF C	1871	522	81	17	39	23	21
	OF D	1837	639	57	12	29	31	29
	OF E	1095	436	115	19	38	35	8
	OF F	1953	406	98	17	36	41	6
Field	OF G	1982	964	71	43	50	8	0