

1 **Land use affects lowland stream ecosystems through dissolved oxygen regimes**

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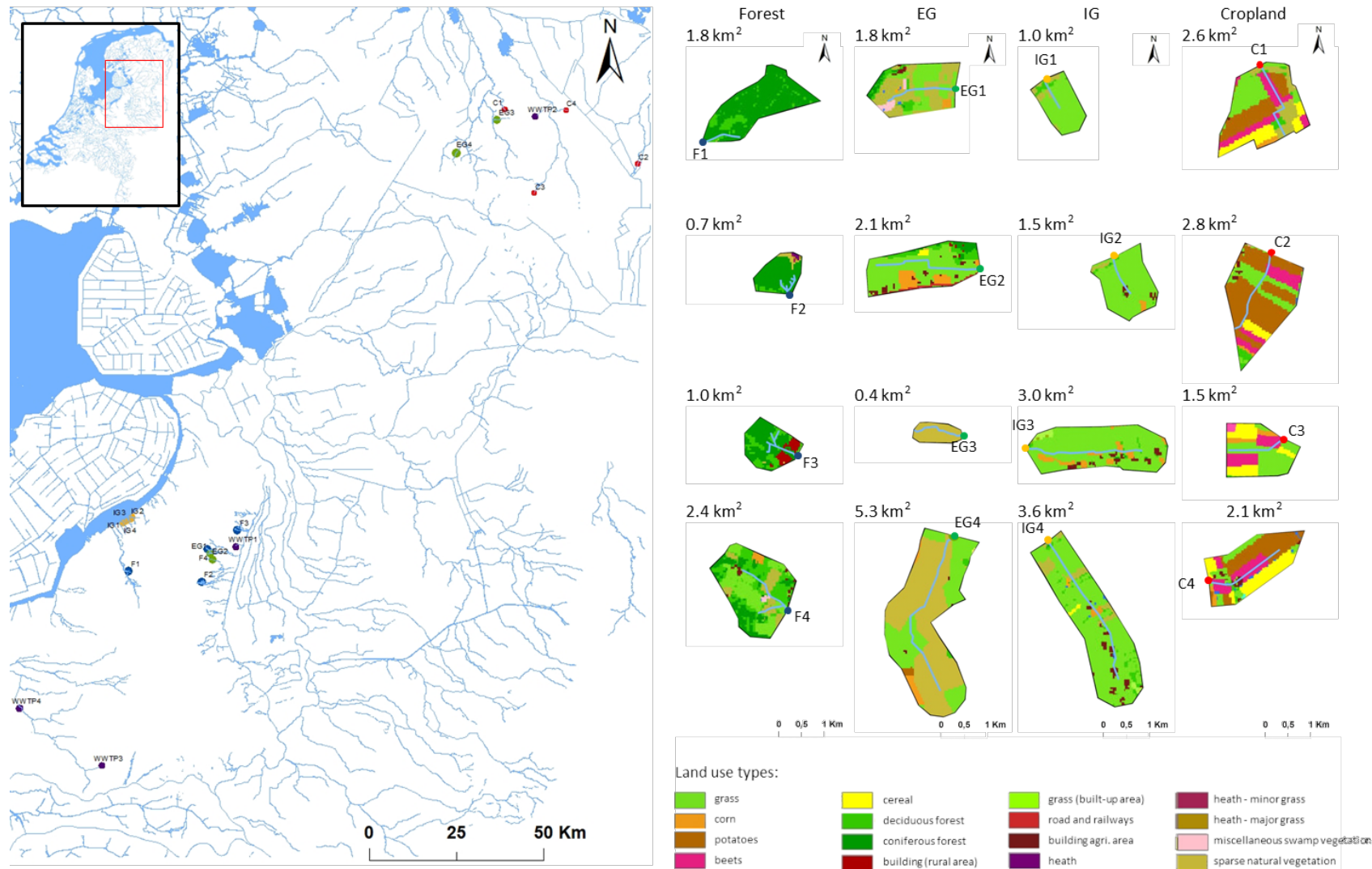
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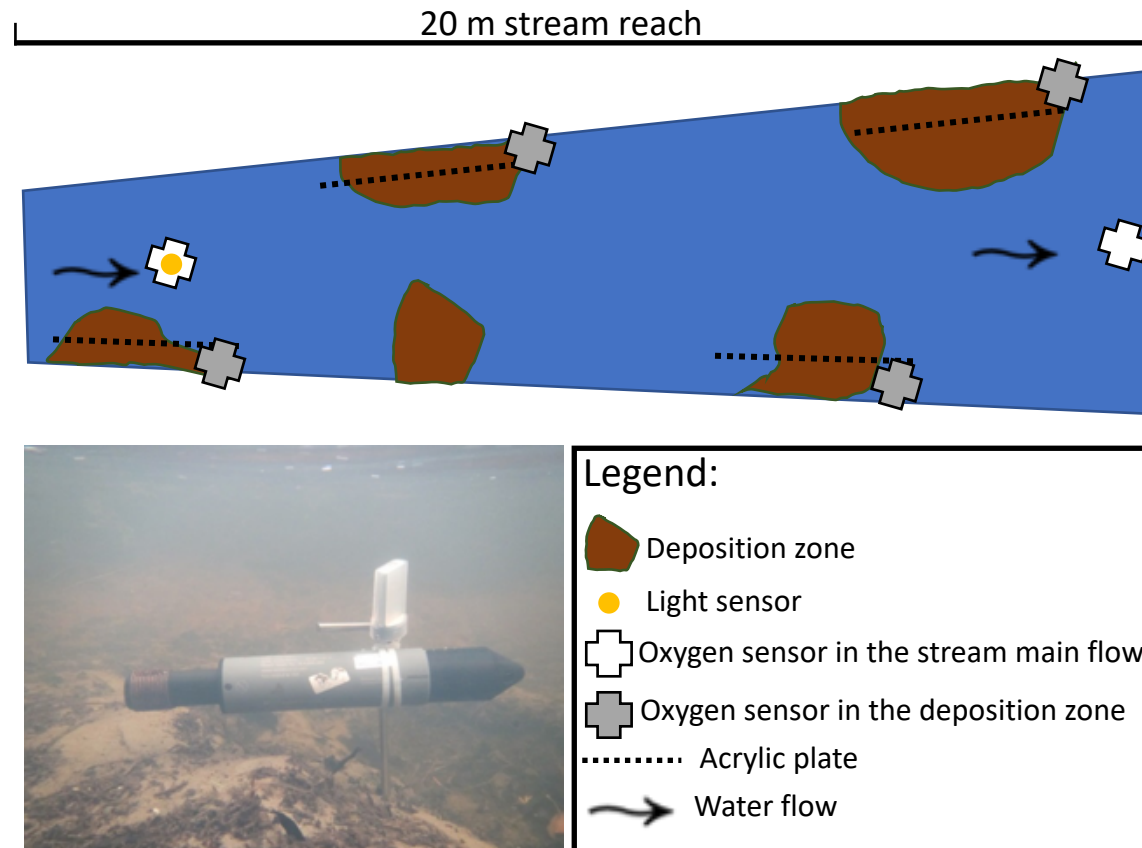
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 13 Figure S1: Sampling sites of twenty streams (Forest: F1, F2, F3 and F4; extensive grassland: EG1, EG2, EG3 and EG4; intensive grassland: IG1, IG2,  
 14 IG3 and IG4; cropland: C1, C2, C3 and C4; WWTP: WWTP1, WWTP2, WWTP3 and WWTP4) within the network in water bodies in the Netherlands.  
 15 Sub-catchment boundary was delimited by elevation data or man-made structures in the landscape (e.g. drainage ditches) in Forest, EG, IG and  
 16 cropland land use types based on the topographic map of the Kadaster [1:25.000 scale] at RD new projection. Image created with Esri, ArcGIS  
 17 Desktop 10.6 , 2019.

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Figure S2: Installation of oxygen and light sensors in each studied stream.

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Table S1: Mean water temperature (°C), depth (m); width (m), velocity (m/s) and catchment area (n = 4 replicate stream), GPS coordinates (decimal degrees) and the percentage occurrence of each land use type present in the catchment, per land use type (Forest, EG – extensive grassland, IG – intensive grassland, cropland and WWTP – wastewater treatment plant).

	forest	EG	IG	cropland	WWTP
Water temperature (°C)	12.6 (1.0)	12.4 (0.4)	12.8 (0.1)	14.7 (0.5)	15.9 (0.8)
Depth (m)	0.13 (±0.08) <sup>a</sup>	0.27 (±0.15) <sup>a</sup>	0.22 (±0.02) <sup>a</sup>	0.35 (±0.1) <sup>a</sup>	0.26 (±0.07) <sup>a</sup>
Width (m)	2.0 (±0.3) <sup>a</sup>	2.2 (±1.2) <sup>a</sup>	2.4 (±0.8) <sup>a</sup>	2.9 (±1.2) <sup>a</sup>	2.8 (±0.7) <sup>a</sup>
Velocity (m/s)	0.099 (±0.02) <sup>ab</sup>	0.069 (±0.08) <sup>a</sup>	0.118 (±0.03) <sup>ab</sup>	0.022 (±0.01) <sup>a</sup>	0.192 (±0.05) <sup>b</sup>
Discharge (m <sup>3</sup> /s)	0.004 (±0.002) <sup>a</sup>	0.003 (±0.002) <sup>a</sup>	0.010 (±0.006) <sup>ab</sup>	0.004 (±0.004) <sup>a</sup>	0.022 (±0.012) <sup>b</sup>
Total catchment area (km <sup>2</sup> )	1.5 (± 0.8)	2.4 (± 2.0)	2.3 (± 1.2)	2.2 (±0.5)	n.a.
GPS coordinates (DD)					
replicate 1	52.305007, 5.726070	52.332772, 5.937832	51.995054, 5.653381	53.026983, 6.698200	52.343681, 6.001478
replicate 2	52.288031, 5.915494	52.322866, 5.944421	52.3874072, 5.730138	52.9422384, 7.0401342	53.014682, 6.774243
replicate 3	52.3698969, 6.0065093	52.9364721, 6.6275572	52.389585, 5.733787	52.8947691, 6.7682192	51.995914, 5.653480
replicate 4	52.340030, 5.929707	52.9592017, 6.571805	52.382086, 5.711314	53.025835, 6.860144	52.089662, 5.446765
Land use type					
forest (%)	92 (±9.3)	1.8 (±1.9)	0 (±0)	2 (±3)	n.a.
EG (%)	9.4 (±13.3)	88.1 (±8.9)	5 (±5.1)	0 (±0)	n.a.
IG (%)	0 (±0.4)	9.3 (±9.7)	88.9 (±2.9)	25.4 (±5.7)	n.a.
cropland (%)	1.6 (±0.8)	0.8 (±1.6)	2.8 (± 2.9)	72.6 (±3.3)	n.a.
urban (%)	0 (±3.7)	0 (±0)	3.2 (±2.2)	0 (±0)	n.a.

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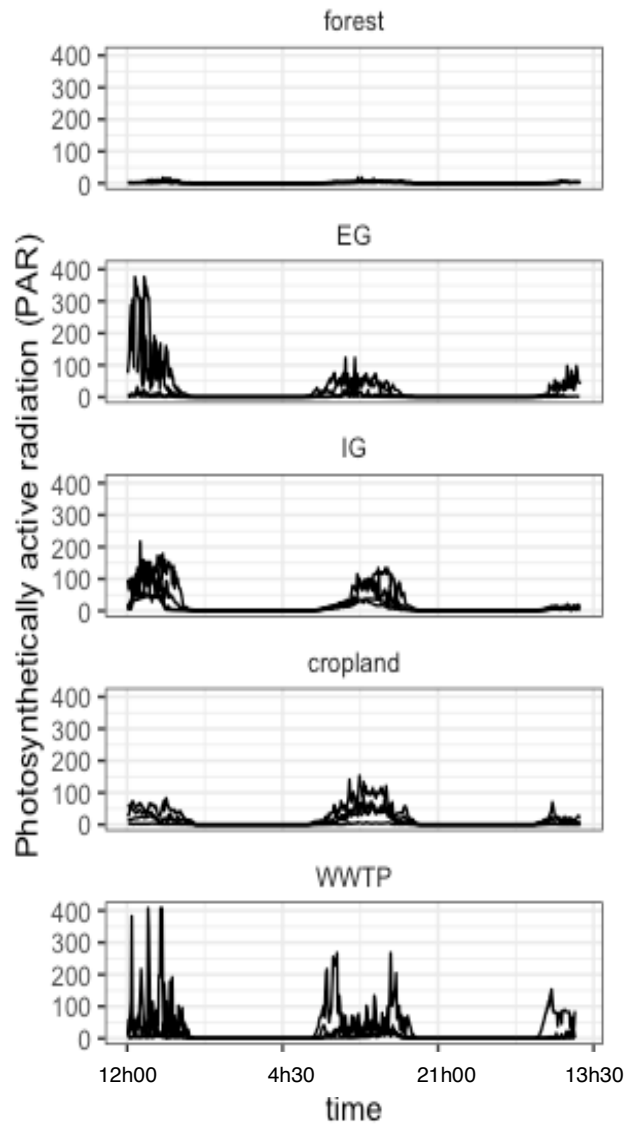
42 Table S2: Mean gross primary production (GPP) respiration (ER), the productivity and respiration ratio (P/R) and net ecosystem production (NEP)  
 43 per land use type for main path flow (n = 8) and deposition zone (n = 32).

	forest		EG		IG		cropland		WWTP	
	main path	flow deposition zone	main path	flow deposition zone	main path	flow deposition zone	main path	flow deposition zone	main path	flow deposition zone
GPP ( $\text{g m}^{-2} \text{d}^{-1}$ )	0.45 (0.40)	0.23 (0.22)	1.68 (0.99)	1.49 (1.52)	1.66 (1.06)	1.79 (1.40)	1.88 (2.58)	1.36 (1.63)	0.43 (0.33)	0.44 (0.32)
ER ( $\text{g m}^{-2} \text{d}^{-1}$ )	5.43 (3.12)	5.33 (3.73)	11.43 (9.60)	13.39 (15.22)	8.08 (2.04)	6.89 (2.06)	3.78 (2.21)	3.94 (4.43)	3.20(0.67)	9.79 (7.90)
P/R	0.11 (0.12)	0.08 (0.09)	0.18 (0.13)	0.15 (0.12)	0.19 (0.08)	0.25 (0.18)	0.47 (0.43)	0.54 (0.39)	0.15 (0.13)	0.08 (0.09)
NEP ( $\text{g m}^{-2} \text{d}^{-1}$ )	-4.98 (3.32)	-5.1 (3.81)	-9.75 (8.90)	-11.9 (14.49)	-6.42 (1.13)	-5.10 (1.68)	-1.9 (1.89)	-2.77 (0.87)	-2.77 (0.87)	-9.35 (7.61)

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48 Figure S3: Light in photosynthetically active radiation (PAR) measured during 48 hours in the  
49 main flow path of the stream in 4 replicate streams per land use type.

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54 Table S3: Mean abundance and standard deviation (sd) (n = 4) of macroinvertebrate taxa  
 55 per sample (625 cm<sup>2</sup>), per land use (Forest, EG – extensive grassland, IG – intensive  
 56 grassland, cropland and WWTP – wastewater treatment plant).

		forest		EG		IG		cropland		WWTP	
		mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Asselidae	<i>Asellus aquaticus</i>	5.9	10.9	9.3	9.4	50.3	62.8	14.5	12.7	32.4	38.8
	<i>Proasellus</i> sp.	0.1	0.1	0.3	0.6	2.4	3.5	0.2	0.4	14.8	28.8
Bivalvea	<i>Pisidium</i> sp.	5.6	1.8	34.3	28.6	10.5	11.0	23.2	17.9	0.1	0.3
	<i>Sphaerium</i> sp.	0.0	0.0	1.8	3.1	0.0	0.0	11.8	16.2	0.8	1.3
Chironomidae	<i>Apsectrotanypus trifascipennis</i>	4.4	7.4	1.0	1.7	10.8	8.3	0.0	0.0	0.0	0.0
	<i>Chironomus</i> sp.	0.8	0.7	1.6	2.8	0.6	0.7	7.7	8.6	33.3	48.5
	<i>Cladopelma</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	<i>Cladotanytarsus</i> sp.	0.1	0.1	0.0	0.0	4.4	8.4	0.0	0.0	0.0	0.0
	<i>Clinotanypus nervosus</i>	0.0	0.0	0.1	0.3	2.4	3.1	1.1	1.9	0.8	1.3
	<i>Conchapelopia</i> sp.	0.6	0.5	0.1	0.1	0.6	0.8	0.1	0.1	0.1	0.1
	<i>Corynoneura</i> sp.	0.3	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	<i>Cricotopus</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
	<i>Cryptochironomus</i> sp.	0.1	0.3	0.0	0.0	1.4	1.8	0.1	0.3	0.4	0.5
	<i>Dicrotendipes</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.0
	<i>Endochironomus</i> sp.	0.0	0.0	0.1	0.1	0.1	0.3	0.6	0.7	1.6	3.3
	<i>Epoicocladus</i> sp.	0.4	0.9	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Eukiefferiella</i> sp.	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Glyptotendipes</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0
	<i>Heterotrissocladus</i> sp.	0.2	0.4	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0
	<i>Macropelopia</i> sp.	2.1	4.0	0.2	0.4	0.8	0.7	0.4	0.8	0.0	0.0
	<i>Micropsectra</i> sp.	172.8	340.0	0.8	1.2	16.5	12.7	0.0	0.0	0.0	0.0
<i>Microtendipes</i> sp.	0.0	0.0	0.0	0.0	0.1	0.3	0.1	0.1	5.4	9.9	

<i>Parachironomus</i> sp.	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.8
<i>Paratendipes</i> sp.	8.4	15.8	0.1	0.1	3.2	1.9	0.1	0.1	0.0	0.0
<i>Phaenospectra</i> sp.	3.5	3.8	0.1	0.1	0.0	0.0	0.3	0.6	0.8	1.3
<i>Polypedilum</i> sp.	5.9	7.8	0.6	0.7	0.4	0.6	0.4	0.8	0.1	0.1
<i>Procladius</i> sp.	0.9	1.3	0.8	0.5	7.2	2.9	6.0	11.0	0.0	0.0
<i>Prodiamesa rufovittata</i>	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Prodiamesa olivacea</i>	4.1	2.8	0.4	0.6	1.8	2.2	0.0	0.0	0.8	1.1
<i>Psectrotanypus varius</i>	0.0	0.0	9.7	18.7	0.4	0.3	11.5	13.8	0.3	0.5
<i>Rheotanytarsus</i> sp.	0.2	0.4	0.3	0.6	0.1	0.3	0.0	0.0	0.1	0.1
<i>Schineriella schineri</i>	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Stempelinella</i> sp.	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Stichochironomus</i> sp.	5.8	6.7	0.0	0.0	4.1	6.1	0.3	0.6	0.0	0.0
<i>Tanytarsus</i> sp.	0.7	1.2	0.1	0.3	0.2	0.2	0.3	0.6	0.2	0.2
<i>Xenopelopia</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.3	0.0	0.0
<i>Zavrelimyia</i> sp.	1.1	1.2	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0
<i>Agabus</i> sp.	0.4	0.3	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0
<i>Brychius</i> sp.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
<i>Colymbetes</i> sp.	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
<i>Cyphon</i> sp.	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Donaciinae	0.0	0.0	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dryops</i> sp.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.3
<i>Dysticus</i> sp.	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Elmidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
<i>Graptodytes</i> sp.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
<i>Gyrinus</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.2	0.2
<i>Halipus</i> sp.	0.0	0.0	1.9	3.8	0.8	0.7	0.2	0.2	0.3	0.2
<i>Hydroporus</i> sp.	0.2	0.4	0.7	0.8	0.3	0.3	0.5	0.8	0.0	0.0
<i>Hygrobia hermanni</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Coleoptera



	<i>Hygrotus</i> sp.	0.0	0.0	0.3	0.4	0.2	0.4	0.0	0.0	0.1	0.1
	<i>Hyphydrus ovatus</i>	0.0	0.0	0.8	1.3	0.1	0.1	0.0	0.0	0.0	0.0
	<i>Ilybius</i> sp.	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Platambus maculatus</i>	1.2	1.5	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	<i>Porhydrus</i> sp.	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Ceratopogonidae	0.3	0.3	0.3	0.5	1.7	1.1	0.4	0.7	0.6	1.0
	Chaoboridae	0.0	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0
	Culicidae	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	Dicranota	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Dixella</i> sp.	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0
	<i>Elodes</i> sp.	0.2	0.4	0.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Eloeophila</i> sp.	1.6	1.9	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1
	Empididae	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	Ephydriidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.0
	<i>Erioptera</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0
	<i>Euphyllidoea</i> sp.	0.1	0.1	3.6	7.3	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Hexatoma</i> sp.	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Neolimnomyia</i> sp.	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Pilaria</i> sp.	0.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ptychopteridae	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Simuliidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	Stratiomyidae	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.7
	Tabanidae	1.0	1.2	0.1	0.1	0.2	0.4	0.0	0.0	0.1	0.1
	Tipulidae	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.8	0.3	0.4
Ephemeroptera	<i>Baetis</i> sp.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	<i>Caenis</i> sp.	0.0	0.0	0.1	0.1	0.1	0.1	1.2	2.4	0.1	0.1
	<i>Cloeon dipterum</i>	0.5	1.0	10.6	13.7	1.3	1.1	66.8	104.6	0.3	0.2
	<i>Leptophlebia</i> sp.	11.6	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	<i>Procloeon bifidum</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Ephemera danica</i>	5.3	9.2	2.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0
Gammaridae	<i>Crangonix sp.</i>	0.0	0.0	0.9	1.4	0.0	0.0	0.6	1.3	10.5	21.0
	<i>Gammarus roeselli</i>	1.7	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Gammarus sp.</i>	27.9	35.2	76.7	145.6	21.7	17.7	1.6	3.3	31.8	52.1
	<i>Anisus sp.</i>	0.3	0.5	0.9	1.1	3.6	3.3	5.9	6.9	1.8	3.5
	<i>Bathyomphalus contortus</i>	0.0	0.0	0.3	0.5	1.7	1.1	1.5	2.5	0.1	0.3
	<i>Bithynia sp.</i>	0.0	0.0	5.1	7.2	3.8	7.1	12.3	23.5	2.3	2.2
	<i>Galba truncatula</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.3
	<i>Gyraulus sp.</i>	0.0	0.0	0.2	0.2	0.3	0.2	2.4	4.8	8.6	15.0
	<i>Hippeutis complanata</i>	0.0	0.0	0.2	0.4	0.0	0.0	0.7	0.6	0.1	0.1
	<i>Lymnaea stagnalis</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.4	0.8
	<i>Physa sp.</i>	0.0	0.0	0.9	1.6	1.8	2.3	0.4	0.3	1.4	1.6
	<i>Physella acuta</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5
	<i>Planorbarius corneus</i>	0.0	0.0	1.4	1.1	0.1	0.1	1.8	2.0	0.5	0.8
	<i>Planorbis sp.</i>	0.0	0.0	1.5	3.0	0.9	1.6	0.2	0.4	0.4	0.8
	<i>Potamopyrgus antipodarum</i>	0.1	0.1	0.0	0.0	1.3	2.1	0.0	0.0	224.2	443.1
	<i>Radix sp.</i>	0.0	0.0	0.4	0.5	1.5	2.7	0.3	0.3	0.6	1.0
Gastropoda	<i>Stagnicola sp.</i>	0.0	0.0	0.6	1.3	0.1	0.1	0.1	0.1	0.3	0.3
	<i>Valvata sp.</i>	0.0	0.0	3.3	4.4	9.3	7.5	18.4	31.1	12.5	16.6
	<i>Cymatia sp.</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	<i>Notonecta sp.</i>	0.0	0.0	0.5	0.7	0.0	0.0	0.1	0.1	0.0	0.0
Hemiptera	<i>Plea minutissima</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.4	0.0	0.0
	<i>Sigara sp.</i>	0.0	0.0	0.3	0.3	4.8	8.6	0.4	0.4	0.4	0.9
Hydracarina	Hydracarina	4.8	8.3	2.1	1.5	13.7	4.3	0.6	0.6	0.1	0.1
	<i>Alboglossiphonia sp.</i>	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.5	0.8	1.5

	<i>Erpobdella</i> sp.	0.8	0.9	0.3	0.2	1.4	1.3	0.6	0.6	8.5	7.1
	<i>Glossiphonia</i> sp.	0.8	1.2	0.4	0.5	0.9	1.5	0.3	0.4	1.6	1.9
	<i>Helobdella stagnalis</i>	0.0	0.0	0.0	0.0	0.8	1.3	0.8	1.3	28.5	55.7
	<i>Theromyzon</i> sp.	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Lepidoptera	<i>Eleophila nymphaeata</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Megaloptera	<i>Sialis fuliginosa</i>	1.8	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Sialis lutaria</i>	0.4	0.5	3.5	2.3	5.4	3.8	5.2	8.7	0.0	0.0
Odonata	<i>Aeshna</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Calopteryx</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9
	Coenagrionidae	0.0	0.0	0.6	1.1	0.1	0.1	1.3	2.3	0.3	0.4
	<i>Hesperocorixa</i> sp.	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Libellula depressa</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0
Oligochaeta	Oligochaeta	86.9	149.3	20.4	14.7	52.3	33.3	95.8	158.2	294.2	250.0
	<i>Stylaria lacustris</i>	0.0	0.0	0.1	0.1	4.3	4.7	0.4	0.9	2.4	2.2
Ostracoda	Ostracoda	0.0	0.0	0.4	0.6	29.6	28.0	0.0	0.0	0.2	0.2
Platelminty	<i>Dendrocoelum lacteum</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	<i>Dugesia lugubis</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.6	0.7
	<i>Planaria torva</i>	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.8
	<i>Polycelis hepta</i>	0.0	0.0	0.1	0.3	0.0	0.0	0.1	0.3	0.1	0.3
Plecoptera	<i>Nemoura</i> sp.	3.5	5.5	0.1	0.3	0.0	0.0	0.1	0.1	0.0	0.0
Porifera	Porifera	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0
optera	<i>Adicella reducta</i>	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0

<i>Agrypnia</i> sp.	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0
<i>Athripsodes</i> sp.	0.1	0.3	0.1	0.3	0.0	0.0	3.1	6.1	0.0	0.0
<i>Beraeodes minutus</i>	8.5	17.0	7.7	15.4	0.3	0.5	0.1	0.3	0.0	0.0
<i>Enomus tenellus</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
<i>Glyphotaelius pellucidus</i>	2.4	1.8	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
<i>Halesus radiatus</i>	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0
<i>Holocentropus</i> sp.	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
<i>Hydroptila</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6
<i>Hydropsyche</i> sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.0
<i>Limnephilus</i> sp.	6.3	8.6	1.4	2.7	0.1	0.1	0.0	0.0	0.5	1.0
<i>Mystacides</i> sp.	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.0	1.6	3.3
<i>Notidobia ciliaris</i>	1.6	2.6	1.6	1.9	0.1	0.1	0.0	0.0	0.0	0.0
<i>Oxyethira</i> sp.	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phryganeidae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
<i>Plectrocnemia</i> sp.	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Polycentropidae	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Potamophylax rotundipennes</i>	3.4	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Sericostoma personatum</i>	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Silo nigricornis</i>	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Triaenodes bicolor</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9	0.1	0.1

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60 Table S4: Indicator taxa per land use (Forest, EG – extensive grassland, IG – intensive  
61 grassland, cropland and WWTP – wastewater treatment plant) and respective p-values  
62 (package indicpecies; multipatt).

	forest	EG	IG	cropland	WWTP	stat	p.value
<i>Micropsectra</i> sp.	x					0.95	0.05
<i>Pilaria</i> sp.	x					0.87	0.01
<i>Potamophylax rotundipennes</i>	x					0.87	0.02
<i>Glyphotaelius pellucidus</i>	x					0.86	0.01
<i>Corynoneura</i> sp.	x					0.78	0.03
<i>Apsectrotanytus trifascipennis</i>	x		x			0.97	0.00
<i>Paratendipes</i> sp.	x		x			0.93	0.01
Hydracarina	x	x	x			0.98	0.01
<i>Pisidium</i> sp.	x	x	x	x		1.00	0.00
<i>Gammarus</i> sp.	x	x	x		x	0.96	0.05
Ostrachoda			x			0.99	0.00
<i>Anisus</i> sp.			x	x		0.88	0.05
<i>Procladius</i> sp.		x	x	x		0.97	0.01
<i>Sialis lutaria</i>		x	x	x		0.90	0.01
<i>Valvata</i> sp.			x	x	x	0.92	0.03
<i>Stylaria lacustris</i>			x		x	0.90	0.01
<i>Chironomus</i> sp.				x	x	0.97	0.04
<i>Helobdella stagnalis</i>					x	0.98	0.03

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