

Supp. table 1. Mean values of physical and biological variables in winter for the different treatment (control: T_C; *H. diversicolor*: T_H; *S. plana*: T_S; and natural: T_N). With average and standard deviation values as a function of *n* (given in the corresponding column). The stars given to values correspond to a significant difference with T_C ($p < 0.05$: *; $p < 0.01$: **; $p < 0.001$: *) obtained using a Tukey comparison test or a non-parametric pairwise t-test.**

Treatment	<i>n</i>	T _N	T _C	T _H	T _S
Sedimentary parameters					
Bed level (cm)	48	n.d.	+ 0.66 ± 0.67	+ 1.20 ± 0.58 ***	+ 0.95 ± 0.83
Silt particles (< 0.63µm) content (%)	9	14.9 ± 4.09	13.0 ± 6.4	14.3 ± 6.4	14.7 ± 4.0
Water content (%)	9	24.7 ± 3.22	23.1 ± 0.7	23.8 ± 1.3	22.9 ± 1.2
Dry bulk density (Csed: kg m ⁻³)	9	1611.8 ± 89.86	1644.1 ± 18.6	1626.2 ± 35.3	1650.2 ± 31.0
Volumetric mass (kg L ⁻¹)	9	1.91 ± 0.10	1.98 ± 0.11	1.91 ± 0.07	1.86 ± 0.13
Sedimentary organic matter					
Total organic carbon (TOC; %)	3	0.28 ± 0.07	0.23 ± 0.06	0.20 ± 0.05	0.24 ± 0.11
Total nitrogen (TN; %)	3	0.04 ± 0.01	0.03 ± 0.01	0.03 ± 0.01	0.03 ± 0.01
δ ¹³ C	3	-26.06 ± 1.16	-25.26 ± 0.54	-26.70 ± 0.90	-26.69 ± 1.83
odd long chain <i>n</i> -alkanes vs. total odd <i>n</i> -alkanes (%)	3	63.01 ± 14.53	64.92 ± 1.55	59.95 ± 9.15	56.24 ± 10.83
long chain <i>n</i> -alcohols vs. total <i>n</i> -alcohols (%)	3	83.59 ± 6.67	87.50 ± 5.00	87.01 ± 2.58	86.33 ± 3.92
Interstitial water parameters					
Dissolved organic matter (DOM)					
DOC (mg L ⁻¹)	3	8.39 ± 2.16	7.68 ± 1.39	8.27 ± 1.22	6.42 ± 2.13
Humification index (HIX)	3	6.27 ± 2.17	4.82 ± 0.67	5.59 ± 0.64	8.19 ± 0.69
Biological index (BIX)	3	0.69 ± 0.00*	0.80 ± 0.00	0.72 ± 0.03	0.74 ± 0.02
Fluorescence index (FI)	3	1.25 ± 0.01***	1.43 ± 0.01	1.24 ± 0.01***	1.26 ± 0.02***
Nutrients					
Ammonium concentration (NH ₄ ⁺ ; µg L ⁻¹)	3	296.86 ± 97.22	303.96 ± 138.04	331.54 ± 150.43	314.46 ± 86.30
Nitrites concentration (NO ₂ ⁻ ; µg L ⁻¹)	3	4.04 ± 4.53	1.71 ± 1.39	2.15 ± 0.60	3.13 ± 0.41
Nitrate concentration (NO ₃ ⁻ ; µg L ⁻¹)	3	72.64 ± 25.03	76.23 ± 27.99	64.51 ± 36.20	96.44 ± 37.75
Silicate concentration (Si(OH) ₄ ; µg L ⁻¹)	3	62.51 ± 8.29	26.09 ± 16.18	50.28 ± 0.43	70.92 ± 18.69
Phosphorus concentration (PO ₄ ³⁻ ; µg L ⁻¹)	3	115.12 ± 19.81	86.93 ± 29.58	81.19 ± 17.91	104.27 ± 14.99
Biological related parameters					
Microbial abundance and activity					
Bacteria <i>16S rDNA</i> (number of gene copy per ng of extracted DNA)	9	16.8×10 ⁴ ± 11.6×10 ⁴	11.0×10 ⁴ ± 2.3×10 ⁴	15.3×10 ⁴ ± 1.2×10 ⁴	9.6×10 ⁴ ± 4.5×10 ⁴
Archaea <i>16S rDNA</i> (number of gene copy per ng of extracted DNA)	9	11.8×10 ⁴ ± 11.1×10 ⁴	9.23×10 ⁴ ± 3.0×10 ⁴	11.0×10 ⁴ ± 0.9×10 ⁴	7.7×10 ⁴ ± 5.3×10 ⁴
CO ₂ production (nmolCO ₂ g ⁻¹ h ⁻¹)	3	69.0 ± 15.4	75.5 ± 18.8	75.9 ± 6.2	73.6 ± 5.1
Clade I <i>nosZ</i> (number of gene copy per ng of extracted DNA)	9	1.2×10 ⁴ ± 1.0×10 ⁴	1.1×10 ⁴ ± 0.1×10 ⁴	1.5×10 ⁴ ± 0.0×10 ⁴	1.1×10 ⁴ ± 0.5×10 ⁴
Clade II <i>nosZ</i> (number of gene copy per ng of extracted DNA)	9	4.0×10 ⁴ ± 3.1×10 ⁴	2.2×10 ⁴ ± 0.5×10 ⁴	3.4×10 ⁴ ± 0.3×10 ⁴	2.4×10 ⁴ ± 1.3×10 ⁴
Nitrate reduction rates (nmolNO ₃ ⁻ cm ⁻³ h ⁻¹)	15	32.4 ± 8.3	32.0 ± 8.7	42.6 ± 3.7 *	32.9 ± 7.4
Microphytobenthos related parameters					
Chlorophyll a content (µg gDSW ⁻¹)	9	3.5 ± 0.5	2.9 ± 0.5	2.7 ± 0.6	2.6 ± 0.5
Phaeopigments (%)	9	54.7 ± 5.3*	45.1 ± 8.6	48.6 ± 8.5	47.7 ± 5.7
Colloidal carbohydrates EPS (µgEPS gDSW ⁻¹)	9	14.6 ± 12.7	36.9 ± 10.5	18.8 ± 9.2	13.9 ± 3.9**
Colloidal proteins EPS (µgEPS gDSW ⁻¹)	9	3.0 ± 0.6	3.5 ± 0.3	3.1 ± 0.4	3.0 ± 0.9
Bound carbohydrates EPS (µgEPS gDSW ⁻¹)	9	45.8 ± 8.8	45.0 ± 14.1	41.2 ± 9.7	50.8 ± 13.9
Bound proteins EPS (µgEPS gDSW ⁻¹)	9	7.3 ± 0.6	7.1 ± 0.4	7.1 ± 0.5	7.1 ± 0.3
F _V /F _M (rel. unit)	9	0.45 ± 0.08	0.53 ± 0.04	0.49 ± 0.09	0.48 ± 0.08
Photosynthetic efficiency (α; rel. unit)	9	0.34 ± 0.04	0.38 ± 0.07	0.37 ± 0.08	0.40 ± 0.05
rETR _{max} (rel. unit)	9	173.3 ± 46.3	147.9 ± 45.6	156.1 ± 91.7	146.8 ± 40.7
E _{opt} (µmol photons m ⁻² s ⁻¹)	9	374.0 ± 200.3	269.8 ± 109.7	499.8 ± 334.5	420.8 ± 307.4
E _k (µmol photons m ⁻² s ⁻¹)	9	56.4 ± 11.6	54.4 ± 14.4	60.2 ± 31.3	55.6 ± 11.5

Supp. table 2. Mean values of physical and biological variables in late summer for the different treatment (control: T_C; *H. diversicolor*: T_H; *S. plana*: T_S; and natural: T_N). With average and standard deviation values as a function of *n* (given in the corresponding column). The stars given to values correspond to a significant difference with T_C ($p < 0.05$: *; $p < 0.01$: **; $p < 0.001$: *) obtained using a Tukey comparison test or a non-parametric pairwise t-test.**

Treatment	<i>n</i>	T _N	T _C	T _H	T _S
Sedimentary parameters					
Bed level (cm)	48	n.d.	-1.18 ± 0.95	-0.53 ± 1.05*	-4.49 ± 1.78***
Silt particles (< 0.63µm) content (%)	9	30.7 ± 4.2	29.7 ± 4.5	30.7 ± 3.5	22.9 ± 2.9*
Water content (%)	9	43.2 ± 2.5	41.42 ± 3.1	41.4 ± 2.6	36.4 ± 1.6*
Dry bulk density (Csed: kg m ⁻³)	9	1237.9 ± 39.0	1266.1 ± 49.0	1266.8 ± 42.8	1349.4 ± 30.3*
Volumetric mass (kg L ⁻¹)	9	1.83 ± 0.07	1.91 ± 0.06	1.91 ± 0.06	1.95 ± 0.05
Sedimentary organic matter					
Total organic carbon (TOC; %)	3	1.24 ± 0.24	1.76 ± 0.63	1.53 ± 0.36	1.43 ± 0.53
Total nitrogen (TN; %)	3	0.15 ± 0.01	0.21 ± 0.06	0.20 ± 0.04	0.15 ± 0.04
δ ¹³ C	3	-26.27 ± 0.75	-25.64 ± 0.21	-26.34 ± 0.65	-27.10 ± 0.92
odd long chain <i>n</i> -alkanes vs. total odd <i>n</i> -alkanes (%)	3	63.67 ± 3.46	64.65 ± 5.46	63.11 ± 3.64	62.98 ± 1.79
long chain <i>n</i> -alcohols vs. total <i>n</i> -alcohols (%)	3	86.26 ± 3.42	87.14 ± 2.34	87.67 ± 0.76	89.98 ± 2.14
Interstitial water parameters					
Dissolved organic matter (DOM)					
DOC (mg L ⁻¹)	3	3.9 ± 1.2	4.9 ± 1.9	4.8 ± 0.1	3.4 ± 1.0
Humification index (HIX)	3	7.30 ± 0.21	5.49 ± 0.16	6.97 ± 0.62	7.76 ± 0.69*
Biological index (BIX)	3	0.70 ± 0.00	0.80 ± 0.01	0.70 ± 0.01	0.72 ± 0.04
Fluorescence index (FI)	3	1.26 ± 0.00	1.45 ± 0.00	1.27 ± 0.00	1.26 ± 0.01
Nutrients					
Ammonium concentration (NH ₄ ⁺ ; µg L ⁻¹)	3	659.2 ± 93.8	990.0 ± 373.5	940.9 ± 21.0	1067.5 ± 290.7
Nitrites concentration (NO ₂ ⁻ ; µg L ⁻¹)	3	65.2 ± 96.9	n.d.	457.0 ± 368.6	401.5 ± 308.7
Nitrate concentration (NO ₃ ⁻ ; µg L ⁻¹)	3	8.8 ± 11.7	n.d.	11.6 ± 15.5	n.d.
Silicate concentration (Si(OH) ₄ ; µg L ⁻¹)	3	158.6 ± 7.5	244.2 ± 48.6	222.5 ± 9.3	242.4 ± 41.1
Phosphorus concentration (PO ₄ ³⁻ ; µg L ⁻¹)	3	161.1 ± 19.5	224.9 ± 47.9	149.4 ± 7.8	272.1 ± 41.1
Biological related parameters					
Microbial abundance and activity					
Bacteria <i>16S rDNA</i> (number of gene copy per ng of extracted DNA)	9	29.0 × 10 ⁴ ± 11.1 × 10 ⁴	22.8 × 10 ⁴ ± 8.7 × 10 ⁴	32.4 × 10 ⁴ ± 19.5 × 10 ⁴	10.4 × 10 ⁴ ± 1.9 × 10 ⁴
Archaea <i>16S rDNA</i> (number of gene copy per ng of extracted DNA)	9	23.9 × 10 ⁴ ± 10.9 × 10 ⁴	24.0 × 10 ⁴ ± 10.6 × 10 ⁴	28.3 × 10 ⁴ ± 19.5 × 10 ⁴	12.3 × 10 ⁴ ± 2.4 × 10 ⁴
CO ₂ production (nmolCO ₂ g ⁻¹ h ⁻¹)	3	136.2 ± 22.9	212.9 ± 35.1	166.3 ± 3.7	168.4 ± 16.1
Clade I <i>nosZ</i> (number of gene copy per ng of extracted DNA)	9	2.9 × 10 ⁴ ± 0.9 × 10 ⁴	2.0 × 10 ⁴ ± 0.6 × 10 ⁴	3.0 × 10 ⁴ ± 2.3 × 10 ⁴	1.1 × 10 ⁴ ± 0.2 × 10 ⁴
Clade II <i>nosZ</i> (number of gene copy per ng of extracted DNA)	9	5.7 × 10 ⁴ ± 2.1 × 10 ⁴	3.5 × 10 ⁴ ± 0.5 × 10 ⁴	4.7 × 10 ⁴ ± 1.0 × 10 ⁴	5.0 × 10 ⁴ ± 2.6 × 10 ⁴
Nitrate reduction rates (nmolNO ₃ ⁻ cm ⁻³ h ⁻¹)	15	100.9 ± 13.0	95.4 ± 7.3	77.2 ± 9.7*	72.6 ± 8.7***
Microphytobenthos related parameters					
Chlorophyll a content (µg gDSW ⁻¹)	9	6.8 ± 0.4	5.9 ± 1.0	6.4 ± 0.6	4.2 ± 1.4
Phaeopigments (%)	9	69.4 ± 2.8	67.9 ± 2.6	67.2 ± 2.4	67.5 ± 11.2
Colloidal carbohydrates EPS (µgEPS gDSW ⁻¹)	9	85.5 ± 6.1	82.5 ± 3.5	77.5 ± 3.7	90.9 ± 6.6
Colloidal proteins EPS (µgEPS gDSW ⁻¹)	9	3.3 ± 0.7	2.8 ± 0.6	2.3 ± 0.3	1.8 ± 0.8
Bound carbohydrates EPS (µgEPS gDSW ⁻¹)	9	179.5 ± 11.5	170.9 ± 12.1	156.1 ± 7.0	179.2 ± 11.6
Bound proteins EPS (µgEPS gDSW ⁻¹)	9	2.8 ± 0.7	4.0 ± 1.0	3.1 ± 0.5	3.1 ± 0.5
F _V /F _M (rel. unit)	9	0.60 ± 0.04	0.54 ± 0.09	0.52 ± 0.07	0.42 ± 0.13
Photosynthetic efficiency (α; rel. unit)	9	0.39 ± 0.09	0.40 ± 0.08	0.39 ± 0.10	0.29 ± 0.12
rETR _{max} (rel. unit)	9	11.9 ± 34.2	91.2 ± 33.3	102.9 ± 35.88	83.6 ± 27.5
E _{opt} (µmol photons m ⁻² s ⁻¹)	9	544.0 ± 218.4	597.6 ± 253.9	507.7 ± 198.1	473.0 ± 148.5
E _k (µmol photons m ⁻² s ⁻¹)	9	306.3 ± 105.8	242.6 ± 93.4	320.5 ± 143.7	352.1 ± 121.0