

Table 1. Physical, chemical and microbial characteristics of stream water at each sampling site of the Ave River during the study period. Data represent mean values (n=4) with ranges given in parentheses.

	Sampling sites					
	L1	L2	L3	L4	L5	L7
pH	6.6 (6.5-6.7)	6.6 (6.6-6.7)	6.8 (6.7-6.9)	6.9 (6.9-7.0)	7.3 (7.2-7.4)	7.1 (6.7-7.4)
Conductivity 20 °C * ($\mu\text{S cm}^{-1}$)	48 (28-79)	48 (37-62)	193**	109 (41-250)	198**	318 (206-463)
Cl ⁻ * (mg L ⁻¹)	3.9 (2.6-5.1)	6.8 (5.0-9.3)	13.8**	10.1 (5.7-16.9)	42.3**	72.0 (28.6-96.5)
NH ₄ ⁺ ($\square\text{g L}^{-1}$)	0.06 (0.05-0.77)	0.07 (0.04-0.22)	0.17 (0.14-0.23)	0.16 (0.16-0.17)	0.27 (0.26-0.28)	0.33 (0.22-0.41)
NO ₃ ⁻ (mg L ⁻¹)	6.16 (5.28-7.92)	7.19 (6.16-7.92)	9.24 (8.36-10.56)	10.34 (9.24-11.44)	11.44 (11.2-11.8)	14.26 (12.76-17.72)
PO ₄ ^{2-*} ($\square\text{g L}^{-1}$)	0.09**	0.10**	0.33**	0.34**	0.61**	0.74 (0.24-0.96)
COD (mg O ₂ L ⁻¹)	18.5 (7.0-41.0)	16.3 (4.0-38.0)	17.0 (6.0-38.0)	18.0 (7.0-35.0)	16.5 (16.0-17.0)	29.7 (25.0-33.0)
Total heterotrophs (CFU ml ⁻¹)	4.3 x 10 ³ (1.4-6.5 x 10 ³)	4.9 x 10 ³ (2.3-6.9 x 10 ³)	21.7 x 10 ³ (1.5-68.5 x 10 ³)	11.0 x 10 ³ (0.7-20.3 x 10 ³)	74.9 x 10 ³ (1.4-167.0 x 10 ³)	1399.4 x 10 ³ (5.5-4800.0 x 10 ³)
Total coliforms (CFU ml ⁻¹)	0.9 x 10 ² (0.8-1.0 x 10 ²)	3.4 x 10 ² (1.1-6.4 x 10 ²)	2.7 x 10 ² (1.5-3.4 x 10 ²)	3.8 x 10 ² (2.4-6.1 x 10 ²)	7.1 x 10 ² (2.0-16.5 x 10 ²)	168.5 x 10 ² (0.7-570.0 x 10 ²)
Faecal coliforms (CFU ml ⁻¹)	10.3 (8.0-31.0)	20.0 (10.0-30.0)	31.7 (20.0-40.0)	13.1 (6.1-20.0)	130.0 (70.0-190.0)	168.3 (90.0-255.0)

* , Data were kindly provided by “Direcção Regional do Ambiente e Recursos Naturais do Norte”.

** , Values are based on one sample taken during the study period.

Table 2. Leaf breakdown rates (d^{-1}) of alder leaves in coarse-mesh (k_c) and fine-mesh (k_f) bags at six sampling sites in the Ave River.

Sites	W_{oc} (%)	$k_c \pm SE$	r^2	W_{of} (%)	$k_f \pm SE$	r^2
L1	90.4	0.0170 ± 0.0023^a	0.73	87.4	0.0121 ± 0.0022^a	0.65
L2	97.3	0.0208 ± 0.0021^{ab}	0.86	91.5	0.0118 ± 0.0019^a	0.71
L3	98.1	0.0282 ± 0.0014^{bc}	0.96	91.3	0.0113 ± 0.0016^a	0.74
L4	94.2	0.0262 ± 0.0025^{bc}	0.89	87.3	0.0145 ± 0.0032^{ab}	0.62
L5	93.1	0.0289 ± 0.0023^{bc}	0.91	88.7	0.0150 ± 0.0018^{ab}	0.81
L7	90.6	0.0369 ± 0.0046^c	0.80	89.6	0.0195 ± 0.0026^b	0.78

W_{oc} and W_{of} , initial leaf mass in coarse-mesh and fine-mesh bags, respectively; r^2 , coefficient of determination; SE, standard error.

In each column, similar superscript letters indicate no significant differences ($p < 0.05$) between leaf breakdown rates (Tukey's multiple comparison).

Table 3. Assessing functional condition in the Ave River using ratios of leaf breakdown rates in coarse-mesh (k_c) and fine-mesh (k_f) bags, according to the criterion and significance defined by Gessner and Chauvet (2002). Score 2 ($k_c:k_f = 1.2-1.5$), score 1 ($k_c:k_f = 1.5-2.0$ or < 1.2) and score 0 ($k_c:k_f > 2.0$). Values of k_c and k_f are in Table 2.

Sites	$k_c:k_f$	Score	Significance
L1	1.4	2	No clear evidence of impacted river functioning
L2	1.8	1	Compromised river functioning
L3	2.5	0	Severely compromised river functioning
L4	1.8	1	Compromised river functioning
L5	1.9	1	Compromised river functioning
L7	1.9	1	Compromised river functioning