

Rezende *et al.*, 2017. Temporal leaf litter breakdown in a tropical riparian forest with an open canopy. *Limnetica* 36(2): 445-459 (2017).

SUPPLEMENTARY INFORMATION

Table S1. Densities of invertebrates colonizing (ind/g) leaves during litter breakdown in the months studied. Functional feeding groups (FFG): P, predators; Ga-Co, gathering-collectors; Fil-Co, filtering-collectors; Shr, shredders; Scr, scrapers; * not classified. Values are means \pm standard errors. *Densidad de invertebrados colonizando las hojas en descomposición (ind/g) durante los meses estudiados. Grupos funcionales según la alimentación (FFG): P, depredadores; Ga-Co, recolectores; Fil-Co, filtradores recolectores; Shr, trituradores; Scr, raspadores; * no clasificado. Los valores corresponden a las medias \pm error estándar.*

<i>Taxa</i>	<i>FFG</i>	January	February	April	May	June	July	August	September	October	November
Annelida											
Oligochaeta	Ga-Co	26.0 \pm 9.8	2.8 \pm 1.5	21.0 \pm 16.9	3.3 \pm 1.9	2.4 \pm 1.5	8.2 \pm 6.2	2.3 \pm 1.3	15.5 \pm 7.8	6.2 \pm 2.6	2.3 \pm 1.4
Hirudinea		10.8 \pm 6.3	1.6 \pm 0.6	7.7 \pm 5.4	6.0 \pm 2.5	16.4 \pm 14.6	17.0 \pm 10.4	0.5 \pm 0.5	4.5 \pm 2.0	0.4 \pm 0.3	1.8 \pm 1.0
Arthropoda											
<i>Amphipoda</i>											
Hyalidae	Shr	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	1.8 \pm 1.0	1.8 \pm 2.0	0.0 \pm 0.0	0.0 \pm 0.0	2.0 \pm 1.2	0.0 \pm 0.0	0.0 \pm 0.0
<i>Insecta</i>											
<i>Coleoptera</i>											
Elmidae	Ga-Co/Scr/Shr	0.0 \pm 0.0	0.4 \pm 0.4	0.0 \pm 0.0	2.8 \pm 2.4	1.0 \pm 0.9	7.4 \pm 6.4	1.0 \pm 0.6	1.0 \pm 0.6	0.2 \pm 0.2	1.0 \pm 0.7
Lampyridae	P	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.3 \pm 0.3	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.6 \pm 0.7	0.5 \pm 0.5
<i>Diptera</i>											
Chironomidae	*	86.4 \pm 14.3	51.8 \pm 19.5	114.0 \pm 47.1	126.8 \pm 31.1	534.2 \pm 384.8	1091.6 \pm 348.1	327.8 \pm 111.1	91.0 \pm 39.8	110.8 \pm 46.5	375.0 \pm 137.8
Ceratopogonidae	Ga-Co/P	0.8 \pm 0.9	0.6 \pm 0.4	0.0 \pm 0.0	0.8 \pm 0.5	0.0 \pm 0.0	0.6 \pm 0.7	0.0 \pm 0.0	0.5 \pm 0.3	0.0 \pm 0.0	0.3 \pm 0.3
Simuliidae	Fil-Co	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.3 \pm 0.3	0.0 \pm 0.0	0.6 \pm 0.7	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.8 \pm 0.5
Empididae	Ga-Co/P	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.5 \pm 0.5	0.8 \pm 0.9	0.6 \pm 0.7	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Tabanidae	P	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.8 \pm 0.8	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Psychodidae	Ga-Co	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	2.0 \pm 1.2	0.0 \pm 0.0	0.0 \pm 0.0
<i>Ephemeroptera</i>											
Leptophlebiidae	Ga-Co/Scr	1.4 \pm 1.6	0.6 \pm 0.4	0.7 \pm 0.6	2.3 \pm 1.7	3.6 \pm 3.8	6.2 \pm 4.5	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	4.5 \pm 3.3
Leptohyphidae	Ga-Co/Scr	4.2 \pm 2.2	11.8 \pm 5.0	36.7 \pm 27.4	9.0 \pm 3.7	17.6 \pm 10.7	15.2 \pm 6.3	3.3 \pm 2.1	4.0 \pm 2.3	4.4 \pm 2.4	34.8 \pm 16.5
Baetidae	Ga-Co/Scr	0.0 \pm 0.0	0.4 \pm 0.4	13.3 \pm 7.3	13.5 \pm 7.6	3.4 \pm 2.3	15.4 \pm 9.1	8.3 \pm 4.2	0.0 \pm 0.0	0.0 \pm 0.0	5.3 \pm 1.3
Caenidae	Ga-Co/Fil-Co	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	6.6 \pm 7.4	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
<i>Trichoptera</i>											
Hydropsychidae	Fil-Co/P	0.0 \pm 0.0	1.0 \pm 0.5	0.7 \pm 0.6	0.0 \pm 0.0	1.2 \pm 1.3	5.0 \pm 3.1	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	4.8 \pm 2.6
Leptoceridae	Ga-Co/P/Shr	0.0 \pm 0.0	0.2 \pm 0.2	0.0 \pm 0.0	1.3 \pm 0.8	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	2.4 \pm 2.4	0.0 \pm 0.0
Philopotamidae	Fil-Co	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.5 \pm 0.5	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0
Calamoceratidae	Shr	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.8 \pm 0.9	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0	0.0 \pm 0.0

Odontoceridae	Ga-Co/Shr	4.2 ± 1.8	0.4 ± 0.4	32.0 ± 21.0	4.0 ± 3.0	5.2 ± 3.5	9.4 ± 6.1	1.3 ± 0.5	3.0 ± 1.7	3.2 ± 2.3	3.5 ± 1.4
Hydroptilidae	Ga-Co/Fil-Co/Scr	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	1.3 ± 1.3	3.4 ± 3.8	1.0 ± 1.1	2.5 ± 1.3	0.0 ± 0.0	1.6 ± 1.5	0.0 ± 0.0
Polycentropodidae	Fil-Co/P	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.6 ± 0.4	0.0 ± 0.0	0.8 ± 0.8	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
<i>Hemiptera</i>											
Nepidae	P	0.0 ± 0.0	0.0 ± 0.0	0.7 ± 0.6	0.0 ± 0.0	0.4 ± 0.4	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
<i>Odonata</i>											
Libellulidae	P	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Gomphidae	P	0.0 ± 0.0	0.0 ± 0.0	6.7 ± 5.8	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Coenagrionidae	P	0.0 ± 0.0	3.6 ± 1.6	0.0 ± 0.0	3.5 ± 2.4	2.0 ± 2.0	0.4 ± 0.4	0.8 ± 0.8	0.0 ± 0.0	0.0 ± 0.0	0.5 ± 0.5
Calopterygidae	P	0.0 ± 0.0	0.0 ± 0.0	11.0 ± 8.2	0.5 ± 0.5	0.0 ± 0.0	5.2 ± 5.0	0.8 ± 0.5	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
<i>Gastropoda</i>											
Lymnaeidae	Scr	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	15.0 ± 13.1	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0
Thiaridae	Scr	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	0.0 ± 0.0	27.2 ± 30.4	41.2 ± 32.5	0.0 ± 0.0	0.0 ± 0.0	1.6 ± 1.8	0.0 ± 0.0

Table S2. Canopy openness (%), conductivity (uS/cm), water temperature (°C), nutrients concentration (A+N = Ammonium + Nitrite; Ort = Ortophosphate, mg/l), water flow (m s), leaf litter breakdown rates (*k*), condition of experiment, authors, climate and vegetation type and localization of some studies as examples to effect of canopy openness. *Cobertura arbórea abierta (%)*, *conductividad eléctrica (uS/cm)*, *temperatura del agua (° C)*, *concentración de nutrientes (A + N = + nitrato de amonio; Ort = ortofosfato, mg/l)*, *flujo de agua (ms)*, *tasas de descomposición de la hojarasca (k)*, *condición del experimento*, *autores*, *clima y tipo de vegetación y la localización de algunos estudios como ejemplos de bosque con cobertura arbórea abierta*.

Canopy openness %	Cond	Temp. °C	Nutrients	Water flow	<i>k</i>	Condition of experiment	Author	Climate - Vegetation	localization
48.5	50.9±7	25.9±0.4	A+N = 0.16; Ort = 0.021	0.18	-0.037	Our study - litter breakdown study in Vereda	-	Tropical - Brazilian Savanah	Pandeiros Basin - Brazil
9.5	18.2±2	22.7±1.8	A+N = 0.10; Ort < 0.015	0.37	-0.033	Litter input and breakdown study in Vereda	Rezende 2014	Tropical - Brazilian Savanah	Pandeiros Basin - Brazil
> 55 (8 streams)	79.1±4	25.5±0.7	-	-	-	Benthic community study	Rezende <i>et al.</i> , 2014b	Tropical - Brazilian Savanah	Pandeiros Basin - Brazil
< 55 (12 streams)	55.5±5	23.4±0.3	-	-	-	Benthic community study	Rezende <i>et al.</i> , 2014b	Tropical - Brazilian Savanah	Pandeiros Basin - Brazil
> 55 (2 streams)	4.1±0.9	17.1±0.8	A+N = 3.12; Ort = 0.192	0.064	-0.045	<i>Inga laurina</i> - leaf breakdown study	Rezende <i>et al.</i> , 2014a	Tropical - Brazilian Savanah	Brazil
< 55 (12 streams)	7.2±1.8	16.0±0.4	A+N = 6.21; Ort = 0.121	0.63	-0.045	<i>Inga laurina</i> - leaf breakdown study	Rezende <i>et al.</i> , 2014a	Tropical - Brazilian Savanah	Brazil
> 55 (2 streams)	4.1±0.9	17.1±0.8	A+N = 3.12; Ort = 0.192	0.064	-0.140	<i>Inga laurina</i> - leaf breakdown study	Rezende <i>et al.</i> , 2014a	Tropical - Brazilian Savanah	Brazil
< 55 (12 streams)	7.2±1.8	16.0±0.4	A+N = 6.21; Ort = 0.121	0.63	-0.146	<i>Inga laurina</i> - leaf breakdown study	Rezende <i>et al.</i> , 2014a	Tropical - Brazilian Savanah	Brazil
> 55 (1 streams)	20.9	4.3	A+N = 72.82; Ort = 6.031	0.78	-0.008	<i>Betula pubecens</i> - fine-mesh leaf breakdown study	Lidman, 2015	Boreal - Mixed boreal coniferous forest	Swedish
< 55 (19 streams)	26.1±2.1	4.2±0.1	A+N = 21.6; Ort = 3.534	1.23	-0.021	<i>Betula pubecens</i> - fine-mesh leaf breakdown study	Lidman, 2015	Boreal - Mixed boreal coniferous forest	Swedish
> 55 (1 streams)	20.9	4.3	A+N = 72.82; Ort = 6.031	0.78	-0.006	<i>Betula pubecens</i> - coarse-mesh leaf breakdown study	Lidman, 2015	Boreal - Mixed boreal coniferous forest	Swedish
< 55 (19 streams)	26.1±2.1	4.2±0.1	A+N = 21.6; Ort = 3.534	1.23	-0.014	<i>Betula pubecens</i> - coarse-mesh leaf breakdown study	Lidman, 2015	Boreal - Mixed boreal coniferous forest	Swedish
> 55 (1 streams)	36–51	5.9–15.0	-	-	-0.02	<i>Alnus glutinosa</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
< 55 (1 streams)	36–51	5.9–15.0	-	-	-0.05	<i>Alnus glutinosa</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
> 55 (1 streams)	36–51	5.9–15.0	-	-	-0.015	<i>Fagus sylvatica</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
< 55 (1 streams)	36–51	5.9–15.0	-	-	-0.008	<i>Fagus sylvatica</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
> 55 (1 streams)	39–56	4.8–17.6	-	-	-0.025	<i>Alnus glutinosa</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
< 55 (1 streams)	39–56	4.8–17.6	-	-	-0.017	<i>Alnus glutinosa</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
> 55 (1 streams)	39–56	4.8–17.6	-	-	-0.021	<i>Fagus sylvatica</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France
< 55 (1 streams)	39–56	4.8–17.6	-	-	-0.008	<i>Fagus sylvatica</i> - artificially shaded in leaf breakdown study	Lagrué <i>et al.</i> , 2011	Temperate - Mixed broad leaf forest	France

12 (1 streams)	48	12.5	-	-	-0.09	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
45 (1 streams)	40	14.6	-	-	-0.12	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
10 (1 streams)	116	14.5	-	-	-0.3	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
38 (1 streams)	114	14.7	-	-	-0.25	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
4 (1 streams)	72	12.8	-	-	-0.15	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
38 (1 streams)	1186	15.4	-	-	-0.35	<i>Alnus glutinosa</i> - leaf breakdown study	de Nadaï-Monoury <i>et al.</i> 2014	Temperate - Mixed broad leaf forest	France
> 20 (8 streams)	15.1±0.8	5.2±0.3	-	-	-0.003	<i>Alnus rubra</i> - leaf breakdown study	Lecerf & Richardson, 2010	Temperate - Mixed broad leaf forest	Canada
< 20 (6 streams)	14.7±1.1	6.1±0.2	-	-	-0.005	<i>Alnus rubra</i> - leaf breakdown study	Lecerf & Richardson, 2010	Temperate - Mixed broad leaf forest	Canada