

Supplementary material

Assessment of variations in dissolved organic matter in contrasting streams in the Pampas and Patagonian regions (Argentina)

R. D. García^A, M. L. Messetta^B, C. Feijó^B and P. E. García^{A,C}

^AGrupo de Ecología de Sistemas Acuáticos a escala de Paisaje, Instituto de Investigaciones en Biodiversidad y Medioambiente, Universidad Nacional del Comahue, CONICET, Quintral 1250, CP8400 San Carlos de Bariloche, Río Negro, Argentina.

^BPrograma de biogeoquímica de ecosistemas dulceacuícolas, Instituto de Ecología y Desarrollo Sustentables, Departamento de Ciencias Básicas, Universidad Nacional de Luján, Route 5 B6702, CP6700 Luján, Argentina.

^CCorresponding author. Email: garcia.patriciaelizabeth@gmail.com

Table S1. Description of each sampling site

Summary description including location, physicochemical characteristics and water flow

Streams	Stream abbreviation	Latitude	Longitude	Temperature (°C)	Conductivity (µS cm ⁻¹)	pH	Water flow (m ³ s ⁻¹)
<i>Pampean streams</i>							
Salado	SALO	-36.983	-61.395	29.0	2770	8.55	–
Pergamino	PERG	-33.871	-60.641	32.1	2200	8.01	0.103
Saladillo I	SAL1	-35.399	-57.634	30.9	1906	9.20	0.004
Las Flores II	FLOR2	-36.023	-60.071	27.4	471	7.91	–
Las Flores I	FLOR1	-34.459	-59.055	..	–	–	0.041
Afluente Lag. Cochicó	COCH	-36.960	-62.282	33.2	1902	8.73	0.013
Cañada Navarro	NAVA	-34.873	-59.342	32.4	2340	9.25	0.008
Juan Blanco	BLANC	-35.142	-57.441	28.7	803	8.89	–
de la Carolina	CARO	-38.207	-58.052	23.9	1481	8.53	0.182
Todos los Santos	SAN	-35.353	-57.417	27.5	674	7.95	0.002
Pescado	PESC	-37.120	-62.035	30.7	1132	8.62	0.339
sin nombre IV	SNOM4	-35.429	-58.791	30.5	3220	9.52	–
Cañada del Tío Antonio	TANTO	-35.040	-60.231	23.9	5410	8.14	–
Los Leones	LEO	-38.451	-59.654	21.8	1346	8.11	0.045
sin nombre III	SNOM6	-33.723	-59.957	31.3	812	8.42	–
Las Garzas	GARZ	-35.223	-59.141	29.6	4850	9.37	–
Saladillo II	SAL2	-35.460	-59.576	26.2	3410	8.80	–
de las Mostazas	MOST	-38.656	-61.327	28.1	1954	8.76	0.479
El Moro	MORO	-38.428	-58.461	29.8	1043	9.19	0.182
Dulce	DULC	-37.623	-57.680	21.5	732	8.34	0.370
Cañada Honda	HOND	-33.954	-59.398	28.0	1597	8.08	–
Pereyra	PERE	-34.602	-59.156	30.3	1073	8.66	0.007
Venado	VEN	-37.186	-62.519	23.3	742	9.02	1.929
Indio Rico	RICO	-38.603	-60.646	28.5	1554	8.73	1.100
sin nombre II	SNOM5	-34.989	-57.717	33.1	1980	9.96	–
Guaminí	GUAM	-37.179	-62.434	26.3	792	8.53	1.553
Cristiano Muerto	MUER	-38.505	-59.730	27.5	1175	8.58	–
Arias	ARI	-34.644	-59.038	18.3	986	8.13	0.058

Streams	Stream abbreviation	Latitude	Longitude	Temperature (°C)	Conductivity ($\mu\text{S cm}^{-1}$)	pH	Water flow ($\text{m}^3 \text{s}^{-1}$)
Guarangueyú	GUARA	-37.739	-58.351	23.1	1089	8.55	0.244
Los Poronguitos	PORO	-35.861	-58.412	27.1	14990	7.72	0.129
del Pescado	DPESC	-38.298	-58.248	28.5	783	9.53	0.159
Saladillo chico	SALCHI	-34.312	-60.284	32.1	1537	8.77	0.234
de las Cortaderas	CORT	-38.451	-61.461	25.5	1252	8.49	0.039
Vivoratá	VIVO	-37.883	-57.912	24.9	1020	8.42	0.272
Calaveras	CALA	-38.065	-59.324	25.9	793	8.72	–
Grande	GRAN	-37.661	-58.554	22.1	791	8.40	–
Ramallo	RAMA	-33.723	-60.228	31.3	1448	8.32	0.066
Helves	HELV	-34.079	-60.027	28.7	872	8.71	0.076
<i>Patagonian streams</i>							
Bandurria	BAND	-40.881	-71.055	9.6	97.3	7.63	0.009
Quintriqueuco	QUIN	-40.951	-71.354	8.0	68.3	8.04	0.063
Chacabuco	CHACA	-41.014	-71.145	11.8	92.6	7.72	0.115
Carbón	CARB	-40.844	-71.097	9.5	69.1	7.49	0.049
Chiñuraco	CHIÑU	-40.934	-71.413	7.1	38.9	7.25	0.050
De la virgen	VIRG	-41.105	-71.485	8.1	45.5	7.04	0.041
La Estacada	ESTA	-40.837	-71.538	3.8	30.0	7.23	0.780
Sin nombre 2	SNOM2	-40.94	-71.379	7.3	52.2	7.4	0.051
Total	TOTO	-40.713	-71.791	9.7	40.0	6.8	2.798
Goye	GOY	-41.093	-71.51	10.9	25.7	7.23	0.315
Ragintuco	RAGI	-40.853	-71.518	4.6	28.9	7.27	0.470
López	LOP	-41.084	-71.548	9.1	25.2	7.08	0.071
El rincón	RINC	-41.782	-71.432	5.8	50.6	7.40	0.235
Piedritas	PIED	-40.759	-71.641	4.0	36.8	7.01	0.106
Villegas	VILL	-41.583	-71.497	7.7	59.1	7.25	2.345
Gutiérrez	GUT	-41.136	-71.414	14.8	52.9	7.35	2.548
Cuyin Manzano	CUY	-40.719	-71.14	6.6	54.3	6.97	0.990
Traful	TRAF	-40.715	-71.113	9.1	41.4	7.28	8.837
Foyel	FOY	-41.721	-71.457	6.1	58.0	7.07	1.511
Sin nombre 1	SNOM1	-40.927	-71.426	7.3	28.6	6.95	0.017
Limay	LIM	-40.895	-71.04	12.1	30.0	7.40	–
Ñirihuau	ÑIRI	-41.166	-71.132	9.9	39.8	7.75	3.779
Cascada	CASC	-41.142	-71.439	9.4	53.1	7.54	0.096
Huemul	HUE	-40.896	-71.472	7.0	38.5	6.97	0.230
Challhuaco	CHALL	-41.205	-71.318	6.1	54.3	8.05	0.301
Pedregoso	PEDR	-40.941	-71.37	6.2	37.6	7.52	0.197
Casa de Piedra	CDP	-41.13	-71.452	8.4	26.9	7.21	0.956
Ñireco	ÑIRE	-41.197	-71.325	7.3	56.4	8.15	0.064
Torrontegui	TORR	-41.252	-71.455	5.3	41.5	8.07	0.260
Melgarejo	MELG	-41.217	-71.408	5.4	105.1	8.08	0.020

Table S2. Multivariate analysis

Result of the Principal Component Analysis (PCA) performed to study variation on DOM features in two different catchments. References: DOC, dissolved organic carbon concentration; a_{254} , absorption coefficients at 254 nm; a_{350} , absorption coefficients at 350 nm; $S_{275-295}$, spectral slope for the interval 275–295 nm; $E_2:E_3$, ratio of the absorption coefficients at 250 and 365 nm; BIX, freshness index; FI, fluorescence index; HIX, humification index. Correlation (>0.7) are in bold

Variables	PC 1	PC 2	PC 3
DOC	0.94	0.19	0.12
a_{254}	0.94	0.10	0.22
a_{350}	0.95	0.02	0.23
$S_{275-295}$	-0.25	0.85	-0.22
$E_2:E_3$	-0.08	0.92	0.09
BIX	0.64	0.08	-0.70
FI	-0.72	-0.01	-0.32
HIX	-0.45	0.14	0.83
Eigenvalue	3.90	1.66	1.48
Variance explained (%)	48.78	20.84	18.52
Cummulative variance explained (%)	48.78	69.62	88.14