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Corrigendum

Corrigendum to "Characterizing solute budgets of a tropical Andean páramo ecosystem" [Sci. Total Environ., Vol: 835(155560) (2022)]

Viviana Arízaga-Idrovo [a], Juan Pesántez [a,*], Christian Birkel [b], Pablo Peña [a], Enma Mora [a], Patricio Crespo [a]

[a] Departamento de Recursos Hídricos y Ciencias Ambientales, Facultad de Ingeniería & Facultad de Ciencias Químicas, Universidad de Cuenca, Cuenca, Ecuador
[b] Department of Geography and Water and Global Change Observatory, University of Costa Rica, San José, Costa Rica

The authors regret that the printed version of the above article contained a number of errors. The correct and final version follows. The authors would like to apologise for any inconvenience caused.

The authors wish to advice of a systemic error in our reported export rates, which were unintentionally miscalculated. The error occurred when calculating the total discharge load with the 5-min discharge values. Instead of multiplying the total discharge by 300 (300 s in 5 min) to obtain the total load, it was multiplied by 100. To correct for this error, all export rates should be multiplied by a correction factor of 3. The reported export errors from the methods to sampling frequencies are not affected since they are expressed as a percentage rate. However, wrongly reported solute budgets are therefore the result of the mistaken export rates. This document

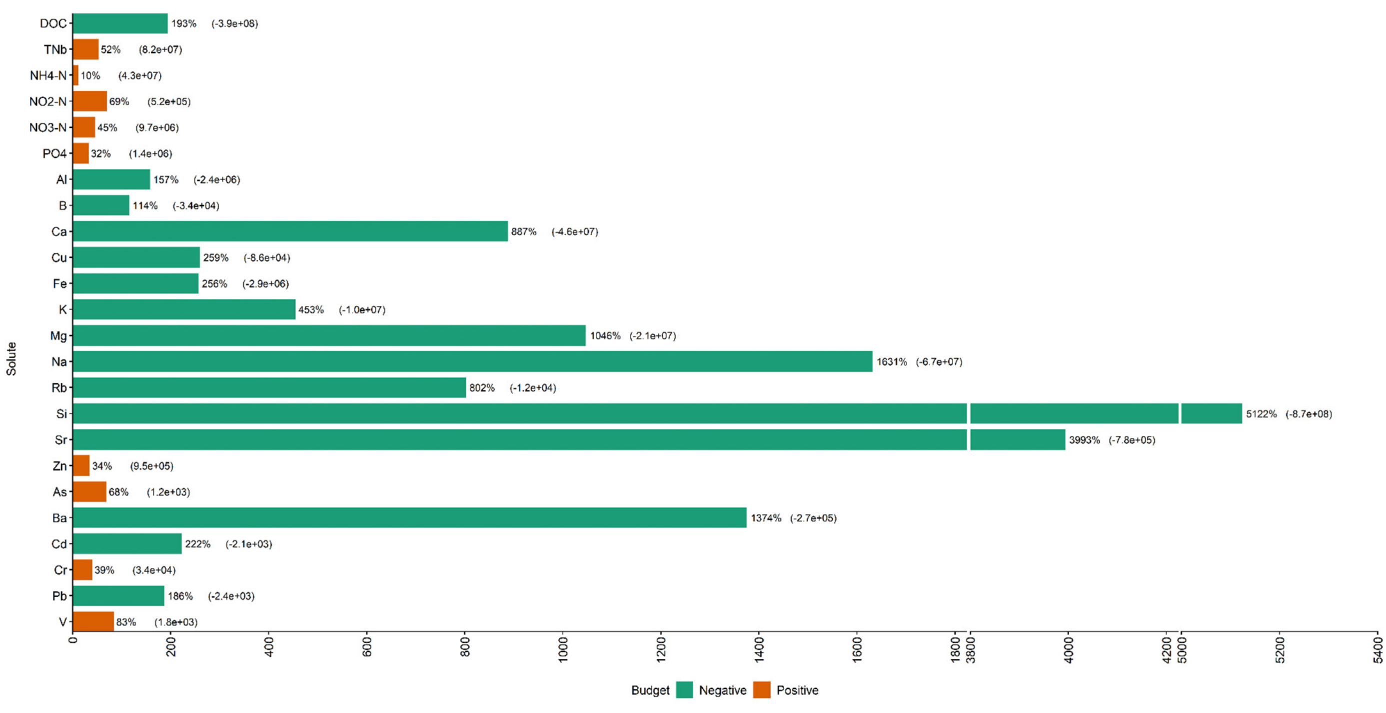

Fig. 6. Solute retention ratios. Negative budgets are presented in green and positive budgets are presented in orange. The values in parenthesis represent the budget value in mEq km^{-2} yr^{-1} calculated with the export rates for the 4-hourly sampling frequency using the interpolation method (M5). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

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Table 2
The 4-hourly export rates calculated using the interpolation method (M5) for the twenty-four solutes in mEq km^{-2} yr^{-1}.

Solute		4-hourly Export	Solute		4-hourly Export
		(mEq km^{-2} yr^{-1})			(mEq km^{-2} yr^{-1})
Nutrients	DOC	8.058E+08	Cations	Al	6.553E+06
	TNb	8.820E+07		B	2.725E+05
	NH_4-N	4.836E+06		Ca	5.126E+07
	NO_2-N	1.176E+06		Cu	1.400E+05
	NO_3-N	7.891E+06		Fe	4.809E+06
	PO4	6.301E+05		K	1.310E+07
Heavy Metals	As	2.507E+03		Mg	2.278E+07
	Ba	2.943E+05		Na	7.136E+07
	Cd	3.744E+03		Rb	1.417E+04
	Cr	2.143E+04		Si	8.859E+08
	Pb	5.269E+03		Sr	8.020E+05
	V	8.796E+03		Zn	4.943E+05

presents the sections with the aforementioned error and should be correctly reported as follows:

3.3.2. Solute export rates estimate

3.4. Total solute budgets and retention ratios

Unlike the previous results, most solutes presented negative than positive budgets (Fig. 6) because of the greater export rates. The highest negative budget was for Si with −8.69E+08 mEq km^{-2} yr^{-1}, followed by Sr with −7.82E+05 mEq km^{-2} yr^{-1}, and Na with −6.70E+07 mEq km^{-2} yr^{-1}. The cations predominantly presented this behavior, indicating a release from these solutes from the catchment. Zn was the only cation that presented a positive budget (9.54E+05 mEq km^{-2} yr^{-1}). The nutrients budgets remained positive even with the greater export rates, suggesting an accumulation of these solutes in the catchment. In contrast, DOC budget turned negative with a value of −3.90E+08 mEq km^{-2} yr^{-1} (193 % retention ratio). As for the heavy metals, Cd and Pb budgets also turned from positive to negative. (See Table 2.)

These trends were the same for all solutes at all sampling frequencies, except for B that randomly presented positive budgets at twice-weekly, weekly, and biweekly sampling frequencies.

4. Discussion

4.2. Export calculation methods, sampling frequency and hour

Throughout all the solutes, Si presented the greatest export with a rate of 62.20 kg ha^{-1} yr^{-1}, suggesting chemical weathering as the watershed acts as a sink of atmospheric CO_2 (Carrillo-Rojas et al., 2019; Turner et al., 2010).

The base cations presented similar export rates than what was found in the tropical montane forest at southern Ecuador. For instance, they showed export rates of 10.27 kg ha^{-1} yr^{-1} for Ca, 5.12 kg ha^{-1} yr^{-1} for K, 2.77 kg ha^{-1} yr^{-1} for Mg, and 16.41 kg ha^{-1} yr^{-1} for Na; while in the montane forest the rates were 6–8 kg ha^{-1} yr^{-1} for Ca, 7–8 kg ha^{-1} yr^{-1} for K, 4–5 kg ha^{-1} yr^{-1} for Mg, and 11–14 kg ha^{-1} yr^{-1} for Na. Bhatt and McDowell (2007) concluded that high concentrations of Ca and Na in surface waters is due to the plagioclase being the main mineral weathered from the catchment.

4.3. Negative and positive total budgets in a páramo ecosystem

Considering DOC presented a negative budget, it can thus be suggested that the páramo acts a source of carbon from its surface waters. The same trend was found for the atmospheric carbon within the ZEO (Carrillo-Rojas et al., 2019).

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Patricio Crespo reports financial support was provided by International Atomic Energy Agency (IAEA).

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Viviana Arízaga-Idrovo, Juan Pesántez, Pablo Peña, Enma Mora, Patricio Crespo
Departamento de Recursos Hídricos y Ciencias Ambientales, Facultad de Ingeniería & Facultad de Ciencias Químicas, Universidad de Cuenca, Cuenca, Ecuador
E-mail address: juanp.pesantezv@ucuenca.edu.ec.

Christian Birkel
Department of Geography and Water and Global Change Observatory, University of Costa Rica, San José, Costa Rica