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Corrigendum to "Weathering without realizing inorganic CO_2 removal revealed through base cation monitoring" published in SOIL, 12, 421–440, 2026

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We report that two errors could be identified in the original manuscript: first, in the description of the BET-SSA methodology it should be mentioned that Kr gas was used in the BET-SSA measurement of durubas basalt and not N_2 gas. Secondly, due to a coding error there was a mistake in Fig. 6e. Figure 6e aggregates contributions from Mg, Ca, Na and K to total alkalinity; due to the coding error only Mg charges were visualized in Fig. 6e. This error was also propagated in Table 4. Please find the corrected Fig. 6 and Table 4 at the following pages of this report.

Interpretation of the results remains largely the same, the error induced the following minor changes in interpretation of the manuscript:

1. The correct maximum CDR potential potentially achievable becomes 37 kg CO_2 t^{-1} basalt and the mean log Wr is −10.97 (and not 26 kg CO_2 t^{-1} basalt and −11.11 as reported previously). The previously reported rounded value of log Wr = −11 from the regression approach remains appropriate.
2. The increase in scavenged alkalinity in the reducible pool (0–20 cm) becomes statistically significant ($p = 0.04$) (and not $p = 0.07$ as previously reported).
3. The conclusion of an absence of SIC accumulation with more basalt addition still holds, yet carbonates did not change significantly in the top soil when adding more basalt, while previously a small decrease in carbonates was reported.
4. Increases in scavenged alkalinity in the top soil exchangeable pool were a factor 4.5 smaller than those in the top soil reducible pool (and not a factor 10 as previously reported).

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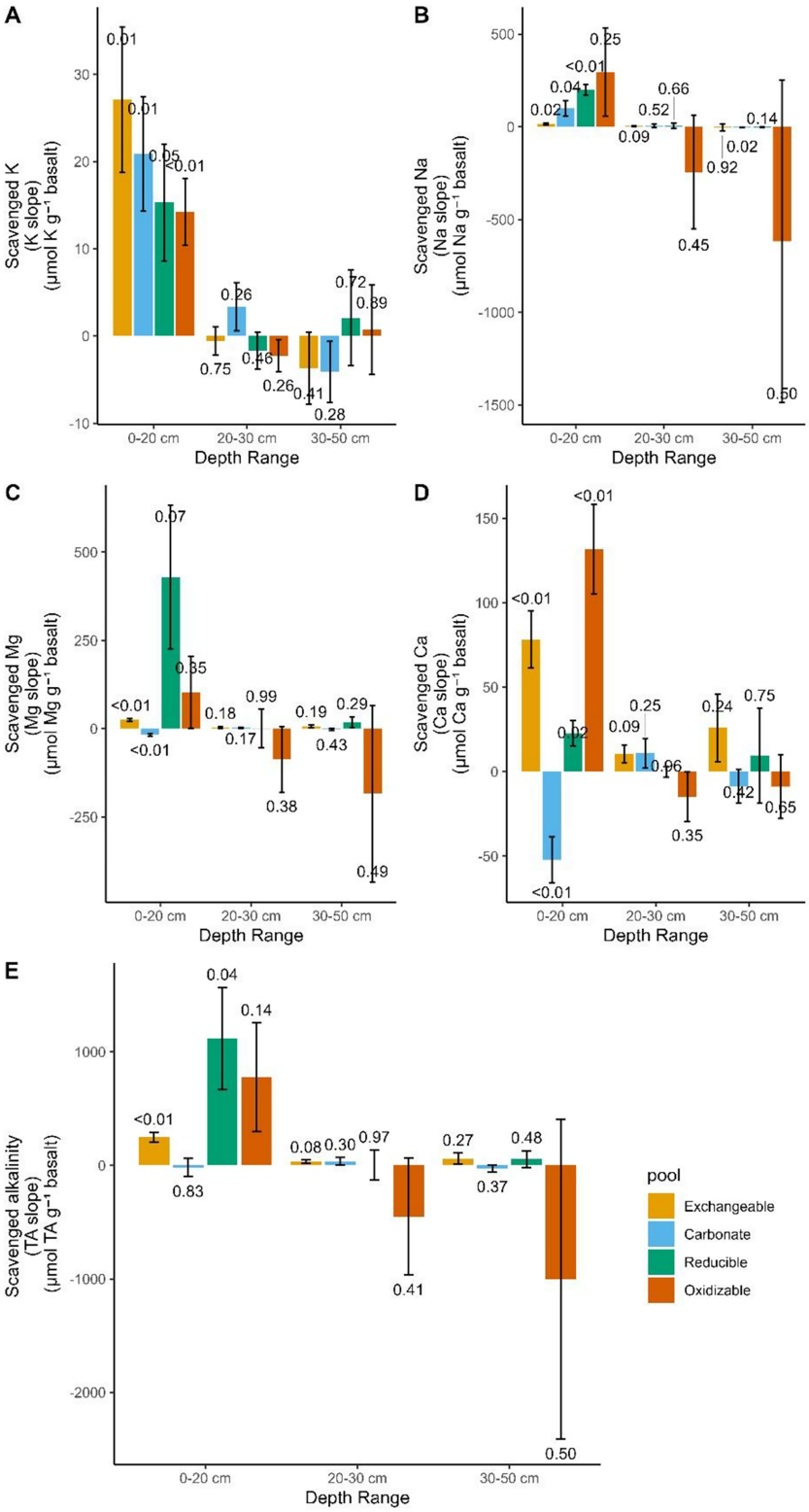

Figure 6. Equivalent alkalinity uptake 101 d after basalt amendment in different soil pools and depths. *P* values of linear regressions are shown above and below bar plots of positive and negative changes respectively. Error bars represent the standard error that was derived from linear regression. Underlying regressions for slopes of TA scavenged by each pool and depth can be found in Fig. S22. Base cation changes in topsoil pore water are not included in this figure as we only include charge equivalent adsorbed by soil pools here, yet base cations in top soil pore water were negligible (see Fig. S24).

Table 4. Overview of the Wr and potential inorganic CO_2 removal that can be quantified from changes in base cations in specific soil pools. Rows where (scavenged) TA increased significantly with increasing basalt amendment are indicated in bold.

Soil pool	Depth	Reservoir	Log Wr (Log mol TA m^{-2} basalt per s)	CDR Potential[a] (kg CO_2 t^{-1} basalt) ($\eta = 0.5$)	CDR Potential[a] (kg CO_2 t^{-1} basalt) ($\eta = 1$)
/	/	Plant[a]	**-12.93 ± 0.07**	/	/
/	/	Leachate[a]	Wr < 0	/	/
Exchangeable	0–20 cm	soil	**-11.50 ± 0.08**	**5.47 ± 0.19**	**10.94 ± 0.38**
Carbonate	0–20 cm	soil	Wr < 0	-0.38 ± 0.34	-0.77 ± 0.68
Reducible	0–20 cm	soil	**-10.85 ± 0.17**	**24.64 ± 1.93**	**49.26 ± 3.86**
Oxidizable	0–20 cm	soil	-11.01 ± 0.27	17.12 ± 2.06	34.25 ± 4.12
Exchangeable	20–30 cm	soil	-12.39 ± 0.21	0.71 ± 0.07	1.42 ± 0.14
Carbonate	20–30 cm	soil	-12.33 ± 0.39	0.81 ± 0.14	1.62 ± 0.28
Reducible	20–30 cm	soil	-13.16 ± 10.49	0.12 ± 0.57	0.24 ± 1.14
Oxidizable	20–30 cm	soil	Wr < 0	-9.90 ± 2.22	-19.81 ± 4.44
Exchangeable	30–50 cm	soil	-12.12 ± 0.36	1.32 ± 0.21	2.63 ± 0.42
Carbonate	30–50 cm	soil	Wr < 0	-0.62 ± 0.12	-1.24 ± 0.25
Reducible	30–50 cm	soil	-12.15 ± 0.58	1.22 ± 0.32	2.45 ± 0.64
Oxidizable	30–50 cm	soil	Wr < 0	-22.04 ± 6.07	-44.08 ± 12.13
Exchangeable	0–20	Exchangeable + plant + leachate	**-11.49 ± 0.07**	**5.47 ± 0.19**	**10.94 ± 0.38**
Exchangeable + Carbonate	0–20	Exchangeable + plant + leachate + carbonate	-11.52 ± 0.16	5.09 ± 0.39	10.18 ± 0.78
All soil pools	All	All soil pools + plant + leachate	-10.97 ± 0.84[b]	18.46 ± 7.10	36.91 ± 14.20

[a] For leachates (which represents realized CDR) and also for plants there is no potential inorganic CO_2 removal in this approach. [b] Abs (Wr/(standard error (Wr) · LN(10))) was used to propagate the error using the $\log_{10}$ transformation, resulting in substantial uncertainty for the Wr estimate of all pools.