Corrigendum; “An affordable and reliable assessment of aquatic decomposition

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Corrigendum

Corrigendum to An affordable and reliable assessment of aquatic decomposition: Tailoring the Tea Bag Index to surface waters [Water Research (2019) 31–43]

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The authors regret to conclude that Figure 4 in this manuscript does not reflect the correct data points as referred to in Keuskamp et al. (2013) due to an unfortunate oversight in our analysis script. As we compare our results (decomposition rate [k_1] and stabilization factor [S] in aquatic ecosystems) to the k_1 and S found in other ecosystems by Keuskamp et al. (2013) (Figure 3), these data points should coincide. In this corrigendum we have rectified this by providing an updated Figure 4 which is exactly in line with Keuskamp et al. (2013) Figure 3.

The new figure does not affect the main message or conclusions drawn in this article. However it does change our statement that the k_1 and S in aquatic ecosystems are somewhat higher than the ones obtained in other ecosystems. The updated Figure 4 shows the k_1 and S in aquatic ecosystems to be somewhat lower, nullifying the conclusion that this might be caused by moisture limited decomposition in terrestrial systems. Our results of the TBI method now correspond well with earlier results from a large-scale meta-analysis (Cebrian and Lartigue, 2004) that showed aquatic decomposition rates were lower (lower k_1) and the total mass that was decomposed was larger (indicative of a lower S) in aquatic systems than those in terrestrial systems. These differences have been attributed to changing nutrient content of detrital matter (Cebrian and Lartigue, 2004). While litter input has been standardized for the TBI method in both aquatic and terrestrial habitats, high leaching in water is known to impact litter quality (Treplin and Zimmer, 2012). Additionally, as the leachate was subtracted prior to further calculations this may lead to lower k_1 due to the large relative loss of the most labile compounds (sugars). The loss of these compounds 1) decreases the overall decomposability of the labile fraction, and 2) decrease the buildup of microbial biomass. In addition, leaching also takes place in soil systems, but is counted as weight loss (and thus contributes to k_1). Furthermore, there are clear indications that differences in food web structure are also impacting decomposition resulting in differences in k_1 and S between terrestrial and aquatic systems (Shurin et al., 2006; Hatton et al., 2015). Together with the obviously lower oxygen concentrations in aquatic systems (especially near the sediments) the lower k_1 and S values found in this study correspond well to our existing knowledge on differences between aquatic and terrestrial decomposition.

We stand by our manuscript, but would like to supply the correct figure for future researchers to build upon further. The authors would like to apologise for any inconvenience caused.

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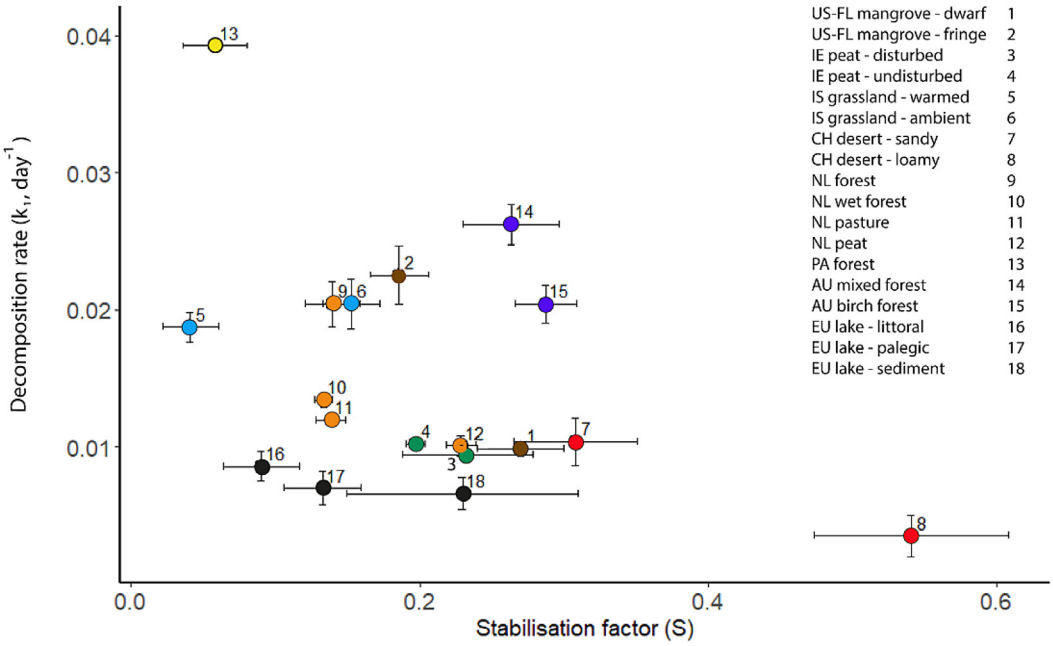

Figure 4. Decomposition constant (k_1, day^{-1}) and stabilization factor (S) across terrestrial ecosystems ([1] – [15], in color; data from Keuskamp et al. (2013)) and European lakes per decomposition zone (littoral [16], pelagic [17] and in the sediment [18]; in black).

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