

Supplementary Materials for

Global patterns and drivers of ecosystem functioning in rivers and riparian zones

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Published 9 January 2019, *Sci. Adv.* **5**, eaav0486 (2019)
DOI: 10.1126/sciadv.aav0486

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Fig. S1. Exponential increase in the number of articles addressing organic matter decomposition in rivers during the past two decades.

Fig. S2. Scatterplot of decomposition rates per day in rivers versus riparian zones and a 1:1 line.

Fig. S3. Relative carbon processing rates between rivers and their riparian zones across latitudes.

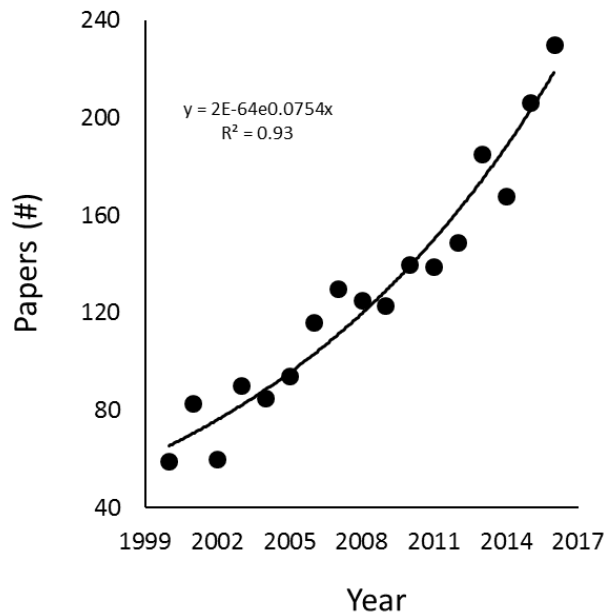


Fig. S1. Exponential increase in the number of articles addressing organic matter decomposition in rivers during the past two decades. Results are based on the Boolean search string “(breakdown OR decomposition) AND (stream OR river) AND (leaf OR organic matter OR litter)” entered in the ISI Web of Science during December 2017. Results revealed 2,182 individual publications from 2000 and 2016, and a strong positive relationship between the number of studies published per year and time ($R^2=0.93$, $p<0.0001$, $n=17$).

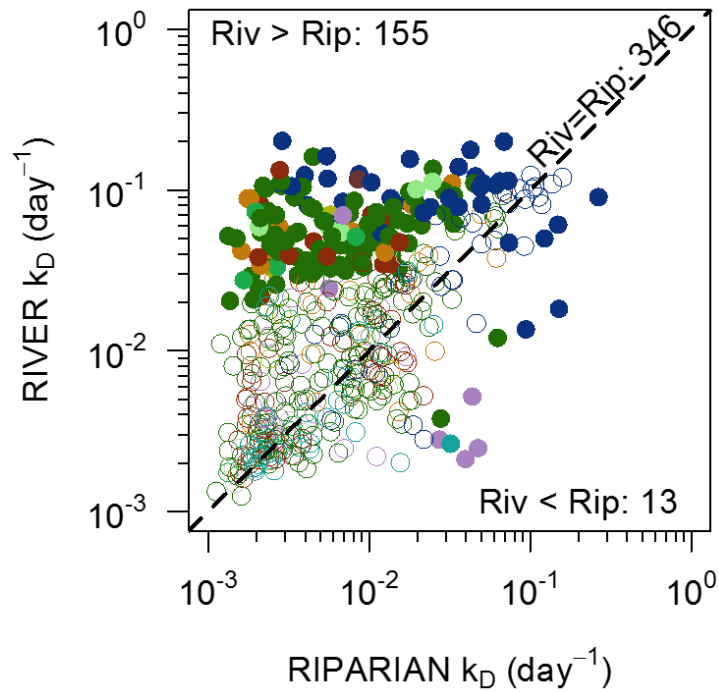


Fig. S2. Scatterplot of decomposition rates per day in rivers versus riparian zones and a 1:1 line. Solid data points above the 1:1 have decomposition rates in rivers that are significantly greater than those in riparian zones (n=155 river-riparian pairs); solid data points below the 1:1 indicate decomposition rates that are significantly more rapid in riparian zones than their rivers (n=13). Open data points overlap with the 1:1 line indicating that decay rates do not differ between these two habitats (n=346). Colors match the biomes shown in Fig. 1.

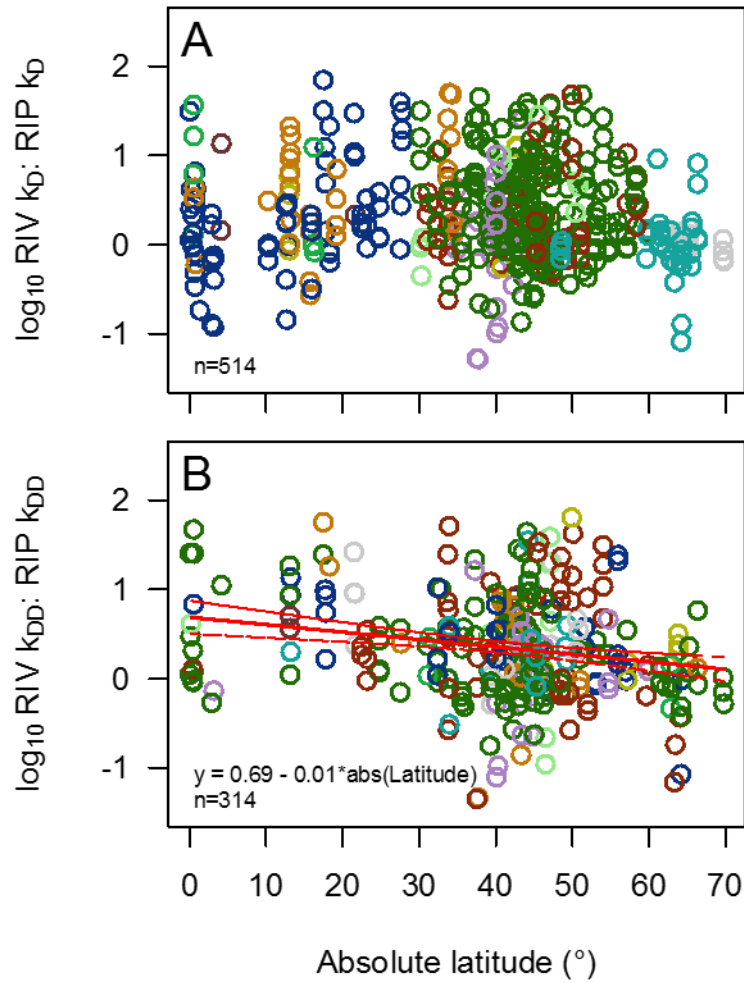


Fig. S3. Relative carbon processing rates between rivers and their riparian zones across latitudes. Rates are expressed as the ratio river:riparian. No relationship was found between decomposition rates expressed on a per day basis and latitude (A), but when temperature-normalized data were examined (i.e., rates were expressed on a per-degree-day basis), a significant negative relationship emerged.