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## Global dataset for carbon and nitrogen stable isotope ratios of lotic periphyton

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**Abstract** Carbon and nitrogen stable isotope ratios ( $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$ ) have been widely employed in food web analysis. In lotic environments, periphyton is a major primary producer that makes a large contribution to food web production as well as carbon and nitrogen cycling. While the  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values have many advantages as a natural tracer, the controls over their high spatial and temporal variability in stream periphyton are not well known. Here, we present the global dataset of  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values of lotic periphyton from 54 published and two unpublished sources, including 978 observations from 148 streams/rivers in 38 regions around the world, from arctic to tropical sites. The 54 published sources were articles recorded during the period of 1994–2016 in 25 academic journals. The two unpublished sources were from the authors' own data. The dataset showed that  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values of periphyton ranged from  $-47.3$  to  $-9.3\text{‰}$  and from  $-5.6$

to  $+22.6\text{‰}$ , respectively. The dataset also includes physicochemical factors (altitude, coordinates, catchment area, width, depth, geology, vegetation, canopy coverage, biome, season, presence of anadromous salmon, temperature, pH, current velocity, and discharge), nutrient data (nitrate and ammonium concentrations), and algal attributes (chlorophyll *a* concentration, algal species compositions, and carbonates removal) in streams/rivers studied, all of which may help interpret the  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  values of periphyton. The metadata file outlines structure of all the data and with references for data sources, providing a resource for future food web studies in stream and river ecosystems.

**Keywords**  $\delta^{15}\text{N}$  ·  $\delta^{13}\text{C}$  · Algae · Food web · Stream · River · Source · Fractionation · Environmental factors

*Ecological Research Data Paper Archives* [http://db.cger.nies.go.jp/JaLTER/ER\\_DataPapers/](http://db.cger.nies.go.jp/JaLTER/ER_DataPapers/).  
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The complete data set for this abstract published in the Data Paper section of the journal is available in electronic format in Ecological Research Data Paper Archives at [http://db.cger.nies.go.jp/JaLTER/ER\\_DataPapers/archives/2018/ERDP-2018-04](http://db.cger.nies.go.jp/JaLTER/ER_DataPapers/archives/2018/ERDP-2018-04).

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