

### RS03 - Planktonic communities

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#### **Exploring the beta diversity of microcrustaceans in the Congo and Kasai River and its tributaries**

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The aim of this study is to compare beta diversity between the Congo and Kasai rivers and their tributaries, and to explore species responses during different hydrological periods of high and low water. Data were collected between 2013 and 2015 across a longitudinal gradient of 1,700 km in the main Congo River and along 600 km of the Kasai River, including the mouths of major tributaries. In total, 160 samples were collected using a 10-L Schindler-Patalas trap. The betapart package was used to analyze the beta diversity of microcrustaceans across sites, using the Sørensen index to calculate community similarity, turnover, and nestedness metrics. The analyses were performed individually for river and tributary sites and between different taxonomic groups. For both taxa, beta diversity was greater in rivers than in tributaries, especially for cladocerans. This result can be related to the greater flow and connectivity in the mainstem river, which should favour diversity, while the smaller tributaries provide an overall more homogeneous and stable environment, thus reduced species dynamics. Considering both environments (rivers and tributaries) together, we found considerable turnover, with values of 0.951 and 0.957 for Cladocera and Copepoda, respectively. These values indicate a rich diversity, with occurrence of species replacement in different water phases. However, little nestedness was observed, with values of 0.020 and 0.0170, indicating little species overlap. The diversity turnover and Sørensen indices show remarkably high diversity, highlighting the importance of understanding the effect of seasonal variation on river microcrustacean community dynamics.